C 55.220/2-3:986

WORLD DATA CENTER A
Oceanography

CATALOGUE OF DATA

CHANGE NOTICE NOS. 36 and 37

WDCA-OC-86-3

World Data Centers conduct international exchange of geophysical observations in accordance with the principles set forth by the International Council of Scientific Unions. WDC-A is established in the United States under the auspices of the National Academy of Sciences.

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WORLD DATA CENTER A
Oceanography

CATALOGUE OF DATA

CHANGE NOTICE NOS. 36 and 37

(1 JANUARY-31 DECEMBER 1985)

WORLD DATA CENTER A
Oceanography
Washington, D.C.

November 1986

U.S. Government Copy

ABSTRACT

This change notice lists and describes all data received by WDC-A, Oceanography during the period 1 January - 31 December 1985. It supplements the original six-volume Catalogue of Data, which includes Change Notice Nos. 1-16. The types of data catalogued include oceanographic station data, bathythermograph data, current measurements, biological observations, meteorological observations, and sea surface measurements. An Alphabetical Index of ship names and a Geographical Index of ocean areas assist the user in selecting the required data. Publications are cross referenced by accession number with the WDC-A Catalogue of Accessioned Publications.

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PREFACE

The six-volume Catalogue of Data and the loose-leaf Change Notice Nos. 1-16, which have been integrated into the Catalogue, now list all oceanographic data received by World Data Center A, Oceanography, from July 1957 through June 1975. The Catalogue has a loose-leaf arrangement of sheets, which have been punched for standard three-ring binders. It includes station location charts for many cruises.

Beginning with Change Notice No. 17, each Change Notice is printed in a modified format as a separate, bound publication describing all data received during a particular six-month or one-year period. The six-volume Catalogue of Data, including Change Notice Nos. 1-16, continues to serve as a reference volume for data received from July 1957 through June 1975. Provision has been made in the modified format for correlating newly received data for a particular cruise with data previously received for that same cruise and already described in the original six-volume Catalogue, including Change Notice Nos. 1-16.

The capability for identifying those data, which have been machine-processed by a national, regional, or responsible national oceanographic data center, has been retained in the modified catalogue format. In addition, this format provides a column for listing the catalogue number from the WDC-A, Oceanography, Catalogue of Accessioned Publications, thus identifying the published report in which the referenced data appear.

Data gathered before the beginning of the IGY in 1957 are not usually catalogued by the World Data Centers. However, extensive collections of pre-IGY oceanographic data gathered by various countries are available through the facilities of this Center. These data for the most part are oceanographic serial station data, surface and related data available in automated form. Machine listings, punched cards, and magnetic tapes containing these data can be prepared upon request.

WDC-A, Oceanography, welcomes suggestions for improved ways to present information in the Change Notices to the Catalogue of Data. It will make every effort to promptly correct any cataloguing error or omission brought to its attention.

INTRODUCTION

The World Data Center system was established in 1957 to collect data from the numerous and widespread observational programs of the International Geophysical Year (IGY) under the principles set forth by the International Council of Scientific Unions (ICSU) and to make such data readily accessible for an indefinite period of time to interested scientists and scholars. The system consists of World Data Center A (WDC-A) located in the U.S.A.; WDC-B located in the U.S.S.R.; and WDC-C located in Western Europe, Australia, and Japan. WDC-A is established under the auspices of the U.S. National Academy of Sciences, where the Coordination Office is located. WDC-A is divided into eight discipline subcenters whose addresses are given on page iv. These centers are located in institutions which, in the opinion of the Academy, can best serve the interests of science because of their data-handling capabilities for the appropriate scientific disciplines. WDC-A, Oceanography, is collocated with the National Oceanographic Data Center (NODC) in Washington, D.C.

ICSU first assigned responsibility for the operation of the World Data Centers to its Comite Special de l'Annee Geophysique Internationale (CSAGI). After completion of the IGY programs, CSAGI's responsibilities were terminated in 1959. ICSU then delegated the responsibility for the operation of the World Data Centers in the post-IGY period to its Comite International de Geophysique (CIG). These functions are now discharged by the ICSU Panel on World Data Centres. The framework for continued international exchange of oceanographic data is set forth in ICSU's Guide to International Data Exchange through the World Data Centres and the Intergovernmental Oceanographic Commission's (IOC's) Manual on International Oceanographic Data Exchange.

The types of oceanographic data desired for inclusion in the World Data Center system are those from "Declared National Programs (DNP's)" and international cooperative expeditions. Declared National Programs are those which a nation has publicly declared with the implied intention of exchanging the resulting data internationally. Data resulting from DNP's are to be exchanged internationally in accordance with provisions of the IOC's Manual and the ICSU Guide. Lists of "National Oceanographic Programs (NOP's)" are compiled, usually annually, by the various national committees on oceanography, submitted to the Intergovernmental Oceanographic Commission (IOC), and published in various IOC information documents.

Contributors of oceanographic data to the World Data Center system and national committees on oceanography are urged to compare the Catalogue of Data with their declared national programs published in IOC information documents to determine whether the cruises actually completed agree with those listed and to ensure that the data resulting from them are transmitted to the World Data Centers in the manner prescribed by the IOC Manual and the ICSU Guide. Data need not be limited to Declared National Programs; WDC-A, Oceanography, welcomes any additional data that fall within the framework of the ICSU Guide and the IOC Manual and that contributors may wish to include in the World Data Center system.

HOW TO USE THE CHANGE NOTICES TO THE CATALOGUE OF DATA

Catalogue Numbering System

The catalogue numbering system uses groups of numbers and letters to designate identifying references for purposes of data archiving and retrieval. A catalogue number consists of numerals for the assigned: series, country, institution, ship and cruise.

Series -- The catalogue numbering system is divided into basic groups called series. At present, these consist of the 100 series for data from ships and other mobile platforms and the 200 series for data from shore and fixed stations in the following categories:

a. Coastal and island stations.
b. Near shore manned stations; i.e., lightvessels and platforms.
c. Offshore manned stations; i.e., ocean weather ships.
d. Unmanned stations; i.e., automatic buoys.
e. Stations on shipping routes.
f. Offshore reference stations visited regularly.
g. Cables in use for oceanographic observations.
h. Repetitive drifting observations; i.e., ice islands, drifting buoys.

Country -- A list in the Indexes section includes all countries and institutions from which this Center has received data during this period together with their discrete identifying numbers. The series and two-digit country number comprise the first three digits of the catalogue number.

Example: For country number 1, Argentina, data from ships and mobile platforms are catalogued as 101, and data from shore and fixed stations as 201.

NOTE: The designations of countries used in this catalogue do not imply the expression of any opinion whatsoever on the part of this Center concerning the legal status of any country or territory, or of its authorities, or concerning the delineation of the frontiers of any country or territory.

Institution -- An institution which contributed data, either directly or through its designated national agency or national, regional or specialized oceanographic data center, is assigned a decimal number following the series/country number.

Example: The number 101.1 is assigned to data taken by ships and mobile platforms and received from the Argentine Servicio de Hidrografia Naval, and the number 201.1 is assigned to data taken at shore and fixed stations and received from the same institution.

Ship -- Each ship, or in some instances a group of ships operating together, is assigned a letter following the series/country/institution

number. The letter is followed by a number assigned to the particular cruise as the data are received.

NOTE: The term "cruise" is used in this catalogue to define, whenever possible, the beginning and ending dates of a series of data collected by a ship, usually identified by the contributing institution with a cruise name and/or number. Sometimes it is necessary to group together several series of data from one or more ships under one catalogue number.

Example: The first cruise data received from the Argentine Servicio de Hidrografia Naval are from the ship CAPITAN CANEPA, which is assigned the letter A, followed by the number 1, thus A-1; the second cruise is A-2, the third is A-3, etc.

All these numbers are combined to make up the complete catalogue number.

A similar system is used in the 200-series for ships but is not applied to lightvessels and fixed shore stations; for the latter the ship/cruise identifier is omitted. For these categories, the series/country/institution numbers are given, but the lightvessel's or station's name must be added instead of the ship/cruise number to complete the catalogue identification.

Example: The Canadian station at Triple Island is identified as: 206.3 Triple Island.

A shore station is listed under the country in or near whose territory it is located. If observations are carried out and the data contributed by an institution of another country, the observing country's name and institution are listed after the name of the country of location.

How to Use the Alphabetical Index

1. Look up the name of the ship or fixed station in the Alphabetical Index where the related country/institution/ship catalogue numbers are listed.

2. Look up, under the respective countries, the indicated Catalogue Numbers.

How to Use the Geographical Index

1. Obtain the geographic area number and name from the Geographical Index Charts.

2. Look up the list of catalogue numbers of available data for the area in the Geographical Index.

3. Use these catalogue numbers to locate information about the types and amount of data available.

How to Obtain Data from WDC-A, Oceanography

When communicating with the Center for additional information concerning data, always refer to the specific catalogue numbers for data of interest to you. The catalogue numbers are designed to speed the identification and retrieval of the information or data you need.

Address all correspondence to:

Director
World Data Center A, Oceanography
National Oceanic and Atmospheric Administration
Washington, D.C. 20235, U.S.A.

If you telephone, the area code is 202.

The Director's number is 673-5546.
The Associate Director's number is 673-5571.
The Data Archives number is 673-5571.

If you wish to visit the Center, its office hours are from 6:30 a.m. to 4:00 p.m., Monday through Friday. The Center is not open on Saturdays, Sundays, and U.S. national holidays. If you wish the use of study space, you should, if possible, give the Center a day or two advance notice so that necessary arrangements can be made. There is no charge for the use of study space.

Guidelines for Dissemination of Data and Information by WDC-A, Oceanography

World Data Center A, Oceanography is held responsible by the ICSU Guide and the IOC Manual on International Oceanographic Data Exchange for the provision of data and information to any qualified requester in the international scientific community. In general, small requests from activities or individuals affiliated with national or regional contributors to the World Data Centers for Oceanography will be considered as an exchange service and will be fulfilled without charge. Similar requests from noncontributors may be handled in the same way. For certain types of requests, limitations in funding, personnel and facilities may preclude direct or free provision of data or information by World Data Center A, Oceanography; in such cases, the following guidelines will apply:

1. In the case of large or specialized requests by noncontributors, WDC-A, Oceanography, will recover the costs for processing and shipping.

2. Unusually voluminous requests or requests for special data services or products not readily available at WDC-A, Oceanography, may be serviced by a regional, national, or disciplinary center at the request of

WDC-A, Oceanography. The requester will be charged an amount not to exceed the cost of processing and shipping.

3. WDC-A, Oceanography, may serve as an intermediary or coordinator for requests for unique types of data or data in other disciplines by placing the originator of the request in contact with the appropriate institution or disciplinary center.

The format in which oceanographic data are sent to the Center varies widely, and the most appropriate method of reproduction differs accordingly. Unless a requester specifies otherwise, the Center always attempts to use the method which will most satisfactorily reproduce the data with the least expense to the requester. Occasionally, the Center acquires extra copies of data, which are made available to requesters without charge as long as the supply lasts.

Acknowledgment of Data Sources

In many instances, data contributed to the Center are unpublished at the time of receipt. Unpublished data can be identified in the Change Notice by the absence of a number in the column entitled WDC-A Accessioned Publications Number. Accordingly, as stipulated by the Guide, recipients of copies of such data from the Center are reminded that the rights of the original investigators must always be respected. Thus, it is requested that if any data supplied by the Center are published, due acknowledgment be made of the institution which undertook the original observations. To facilitate proper acknowledgment, the Change Notice indicates the originating institution.

PART I

CATALOGUE INDEXES

EXPLANATION OF THE ALPHABETICAL INDEX OF SHIPS AND FIXED STATIONS

This index presents in alphabetical order the names of the ships, lightvessels, platforms, and shore stations that are listed on the Data Information sheets.

Ship or Fixed Station -- The name of the ship, lightvessel, platform, lighthouse, shore station, etc. Names of ships and lightvessels are given in capital letters, with lightvessels identified by (LV) after their name. All others not so identified are shore or other types of fixed stations.

Country -- The name of the country that used the ship to collect data, or the name of the country in or near whose territory fixed oceanographic station observations were made. If the data were collected by an institution of another country, the contributing country is listed after the one where the observations were taken.

Institution Number -- The institution number and ship letter assigned to each ship are given in this column to facilitate locating data information in the catalogue.

EXPLANATION OF THE GEOGRAPHICAL INDEX

The Geographical Index is based on the divisions of areas shown on the three charts immediately preceding the Index. These divisions are defined in "Limits of Oceans and Seas," Special Publication No. 23 of the International Hydrographic Bureau, third edition, Monaco, 1953. To define the extensive areas of the Atlantic, Indian, and Pacific Oceans more specifically, the following subdivisions have been added:

23 - North Atlantic Ocean

- 23a - Northeast Atlantic
- 23b - Northwest Atlantic

32 - South Atlantic Ocean

- 32a - Southeast Atlantic
- 32b - Southwest Atlantic

45 - Indian Ocean

- 45a - Northwest Indian
- 45b - Northeast Indian
- 45c - Southwest Indian
- 45d - Southeast Indian

57 - North Pacific Ocean

- 57a - Northwest Pacific
- 57b - Northeast Pacific

61 - South Pacific Ocean

- 61a - Southwest Pacific
- 61b - Southeast Pacific

SO - Southern Oceans

South of latitude 50° South

The catalogue numbers of ship cruises extending into any of the areas, or shore or fixed stations located in the areas, are listed under the area's number and name.

ALPHABETICAL INDEX

SHIP OR FIXED STATION	COUNTRY	INSTITUTION NUMBER	
		100 SERIES	200 SERIES
- A -			
ABUKUMA	Japan	124.13 B	
ACONA	United Sates of America (U.S.A.)	139.20 A	
ADELAIDE	Australia	102.6 A	
ADOLF JENSEN	Denmark	109.2 E	
AGS No. 3	Japan	124.28 C	
AGS No. 4	Japan	124.28 D	
AGS No. 5	Japan	124.28 F	
AICHI MARU	Japan	124.27 A	
Aircraft	Canada	106.22 O	
AKADEMIK KRILOV	Union of Soviet Socialist Republics (U.S.S.R.)	137.5 J	
AKADEMIK KURCHATOV	U.S.S.R.	137.1 H	
AKADEMIK VERNADSKII	U.S.S.R.	137.4 B	
AKI	Japan	124.23 A	
ALAMINOS	U.S.A.	139.7 B	
ALASKA	U.S.A.	139.8 D	
ALBATROSS IV	U.S.A.	139.23 D	
ALEJERO HUMBOLDT	Peru	130.1 E	
ALMEIDA CARVALHO	Portugal	133.1 D	
ALEXANDER AGASSIZ	U.S.A.	139.8 D	
ALFRED NEEDLER	Canada	106.11 V 106.11 W 106.22 P	
ALGONQUIN	Canada	106.27 A	
ALKOR	Germany (F.R.)	114.2 B	
ALMIRANTE CAMARA	Brazil	104.1 D	
ALMIRANTE SALDANHA	Brazil	104.1 A	
ALPHA HELIX	U.S.A.	139.8 S	
AMAMI	Japan	124.13 B	
ANNAPOLIS	Canada	106.27 A	
ANTON DOHRN	Germany (F.R.)	114.2 C 114.6 B 114.7 A 114.11 A	
AOMOKI MARU	Japan	124.27 A	
AOMORI	Japan	124.27 A	
ARGOS	Sweden	135.1 G	
ARGUS	U.S.S.R.	137.10 II	

ALPHABETICAL INDEX

SHIP OR FIXED STATION	COUNTRY	INSTITUTION NUMBER	
		100 SERIES	200 SERIES
ARNI FRIDRIKSSON	Iceland	118.1 J	
ARTICA	Canada	106.10 E	
ASHU	Japan	124.27 A	
ASIZURI	Japan	124.13 B	
ASSINIBIONE	Canada	106.27 A	
A.T. CAMERON	Canada	106.10 E	
		106.11 W	
ATHABASKAN	Canada	106.27 A	
		106.28 A	
ATKINSON	Canada	106.10 E	
ATLANTIS II	U.S.A.	139.1 C	
AWAZI	Japan	124.13 B	
AZUMA MARU	Japan	124.21 A	
- B -			
BAFFIN	Canada	106.27 A	
BEDEQUE	Canada	106.26 A	
BELOGORSK	U.S.S.R.	137.10 JJ	
BENGUELA	South Africa	136.1 D	
BJARNI SAEMUNDSSON	Iceland	118.1 L	
BORKUMRIFF (LV)	Germany (F.R.)		214.1
BRANDAL	Canada	106.11 W	
		106.26 A	
BRISBANE	Australia	102.6 A	
BUZEN	Japan	124.23 A	
- C -			
CANBERRA	Australia	102.6 A	
CANSO CONDOR	Canada	106.11 W	
CAPRICORNE	France	113.3 H	
CHAUDIERE	Canada	106.28 A	
CHIBA MARU No. 2	Japan	124.5 B	
CHI RI SAN	Korea	143.2 K	243.1 C
CHISHIO MARU	Japan	124.27 A	
CHOFU MARU	Japan	124.10 D	
CHOHO MARU	Japan	124.27 A	
CHOKAI MARU	Japan	124.27 A	
CHOSUI MARU	Japan	124.27 A	
CHUK YANG HO	Korea	143.2 J	
Coastal & Light Stations	Canada		206.8
COLUMBIA	Canada	106.28 A	
COLUMBUS ISELIN	U.S.A.	139.14 F	

ALPHABETICAL INDEX

SHIP OR FIXED STATION	COUNTRY	INSTITUTION NUMBER	
		100 SERIES	200 SERIES
COMMANDANT ROBERT GIRAUD	Malagasy Republic		248.2 A
COOK	Australia	102.6 A	
CRYOS	Canada	106.23 C	
- D -			
DAIO	Japan	124.13 B	
DAVID STARR JORDAN	U.S.A.	139.8 D	
		139.23 Y	
DAWSON	Canada	106.9 CC	
DERWENT	Australia	102.6 A	
DEUTSCHE BUCHT (LV)	Germany (F.R.)		214.1
DIAMANTINA	Australia	102.6 A	
DISCOVERER	U.S.A.	139.23 K	
DISCOVERY	United Kingdom	138.5 B	
DITA MARU	Japan	124.27 A	
DOLPHIN	U.S.A.	139.23 G	
DROGUE	U.S.A.	139.7 E	
- E -			
EASTWARD	U.S.A.	139.24 A	
E.E. PRINCE	Canada	106.11 W	
		106.26 A	
EHIME MARU	Japan	124.27 A	
ELBE I (LV)	Germany (F.R.)		214.1
ENDEAVOUR	Canada	106.22 A	206.8 E
ERNST KRENKEL	U.S.S.R.	137.6 Q	
ETIZEN	Japan	124.13 B	
ETSUZAN MARU	Japan	124.27 A	
- F -			
FEHMARNBELT (LV)	Germany (F.R.)		214.1
FRASER	Canada	106.27 A	
FRIEDRICH HEINCKE	Germany (F.R.)	114.4	
FUJI	Japan	124.13 KKK	
FUKUI MARU	Japan	124.22 A	
FUKUSHIMA MARU	Japan	124.27 A	
FUNAKAWA MARU	Japan	124.27 A	
FUSAMI MARU No. 2	Japan	124.5 B	
- G -			
GADUS ATLANTICA	Canada	106.10 E	
GARCIA DEL CID	Spain	134.2 A	

ALPHABETICAL INDEX

SHIP OR FIXED STATION	COUNTRY	INSTITUTION NUMBER	
		100 SERIES	200 SERIES
GATINEAU	Canada	106.28 A	
GAUSS	Germany (F.R.)	114.1 C	
GAUSS II	Germany (F.R.)	114.1 Q	
G.B. REED	Canada	106.4 G	
		106.13 D	
		106.25 A	
G.C. MC DONALD	Canada	106.23 C	
GENKAI MARU	Japan	124.19 B	
GENYO MARU	Japan	124.27 A	
GERRARD TRECA	Senegal	150.1 D	
GERAKL	U.S.S.R.	137.21 C	
GILLIS	U.S.A.	139.14 G	
GUNNAR THORSON	Denmark	109.5 B	
- H -			
HAFTHOR	Iceland	118.1 G	
HAKUCHO MARU	Japan	124.21 A	
HAKUHO MARU	Japan	124.24 B	
HAKUSAN MARU	Japan	124.22 A	
HAMILTON	U.S.A.	139.16 P	
HAN RA SAN	Korea	143.2 G	243.1 C
HATERUMA	Japan	124.13 B	
HAYASUI MARU	Japan	124.23 A	
HAYATE	Japan	124.23 A	
HEIAN MARU	Japan	124.22 A	
HELLAND HANSEN	Norway	128.2 A	
HERMAN WATTENBERG	Germany (F.R.)	114.2 O	214.2 A
HINOKUNI	Japan	124.19 B	
HIZUHO MARU	Japan	124.22 A	
HIYAGI MARU	Japan	124.27 A	
HOBART	Australia	102.6 A	
HOKKO MARU	Japan	124.20 A	
		124.21 A	
HOKUSEI MARU	Japan	124.2 C	
HOKUSHIN MARU	Japan	124.20 A	
HOKUYO MARU	Japan	124.20 A	
HUDSON	Canada	106.9 CC	
HURON	Canada	106.27 A	
HUZI	Japan	124.13 B	
HYOGO MARU	Japan	124.23 A	
- I -			
ISUZU	Japan	124.13 B	
ISOKAZE	Japan	124.23 A	

ALPHABETICAL INDEX

SHIP OR FIXED STATION	COUNTRY	INSTITUTION NUMBER	
		100 SERIES	200 SERIES
IROQUOIS	Canada	106.27 A	
IWAKI MARU	Japan	124.13 B	
		124.21 A	
IWATE MARU	Japan	124.21 A	
- J -			
J.E. BERNIER	Canada	106.22 P	
J.L. HART	Canada	106.24 A	
- K -			
KAGAWA MARU	Japan	124.27 A	
KAIKO MARU	Japan	124.5 B	
KAIUN MARU	Japan	124.21 A	
KAIYO	Japan	124.13 B	
KAKADIAMAA	Ghana	116.1 E	
KAMISIMA	Japan	124.13 B	
KANA KEOKI	U.S.A.	139.26 A	
KANO MARU	Japan	124.27 A	
KASHIMA MARU	Japan	124.27 A	
KATORI	Japan	124.13 B	
KINSEI MARU	Japan	124.20 A	
KOFU MARU	Japan	124.8 D	
KOOTENAY	Canada	106.27 A	
		106.28 A	
KOSHIJI MARU	Japan	124.22 A	
KOSIKI	Japan	124.13 B	
KOYO MARU	Japan	124.16 A	
KRASIY KASP II	U.S.S.R.	137.21 F	
KUMA	Japan	124.13 B	
KUNGAMI	Japan	124.13 B	
KUROBE	Japan	124.13 B	
KUROSHIO	Japan	124.23 A	
KUROSHIO MARU	Japan	124.19 B	
- L -			
LADY HAMMOND	Canada	106.11 W	
LE BRIX	France		213.1 B
LIADOSTROV (SRT-4191)	U.S.S.R.	137.10 H	

ALPHABETICAL INDEX

SHIP OR FIXED STATION	COUNTRY	INSTITUTION NUMBER	
		100 SERIES	200 SERIES
- M -			
MACKENZIE	Canada	106.28 A	
MARGAREE	Canada	106.27 A	
MARINUS	Canada	106.10 E	
MARTIN KNUDSEN	Denmark	109.5 A	
MATSUDA MARU No. 2	Japan	124.20 A	
MATUSIMA	Japan	124.13 B	
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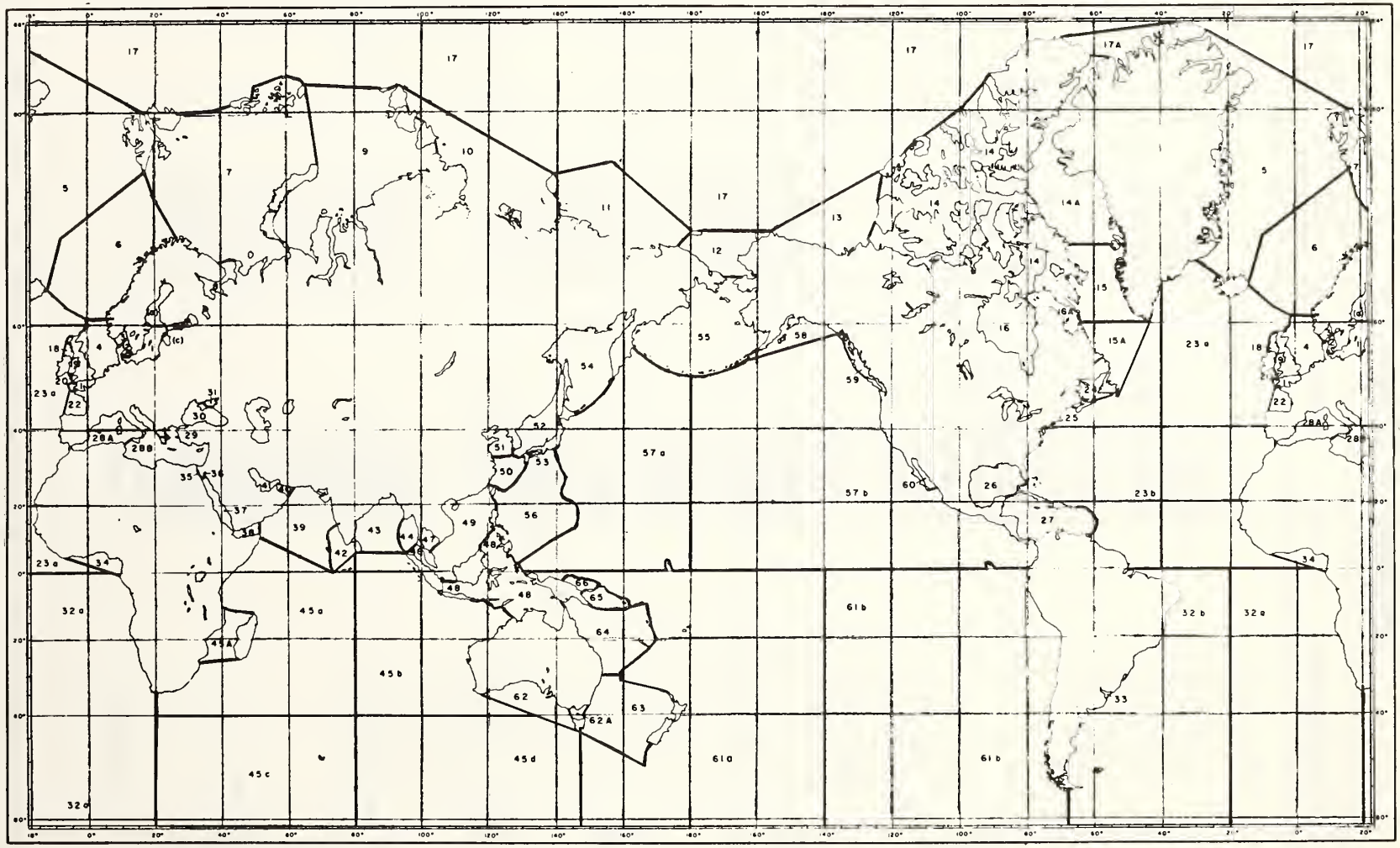
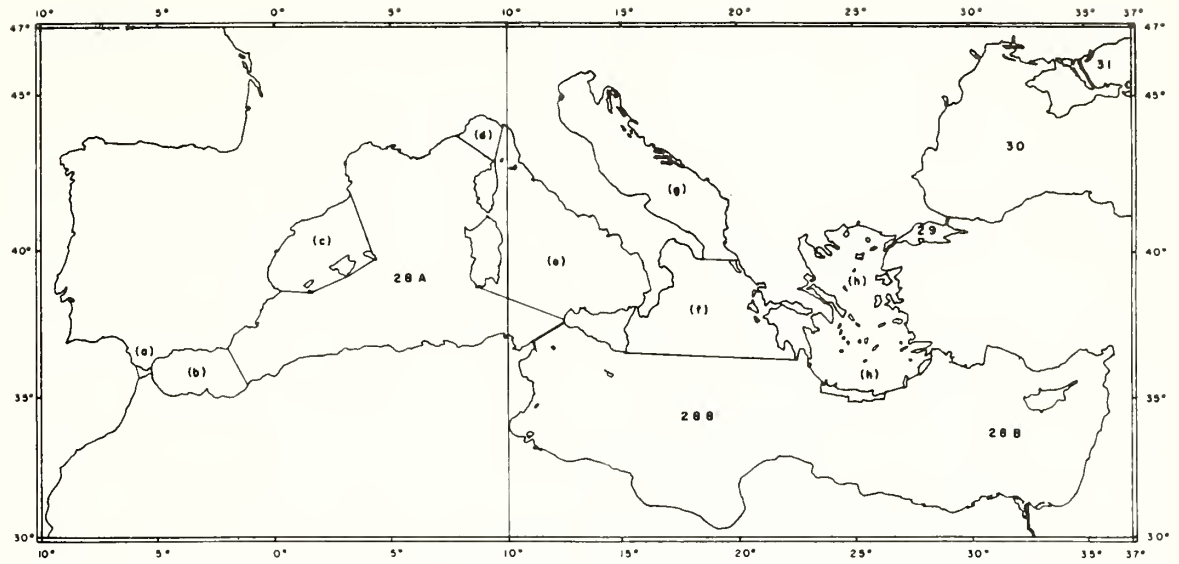


WORLD GEOGRAPHICAL INDEX



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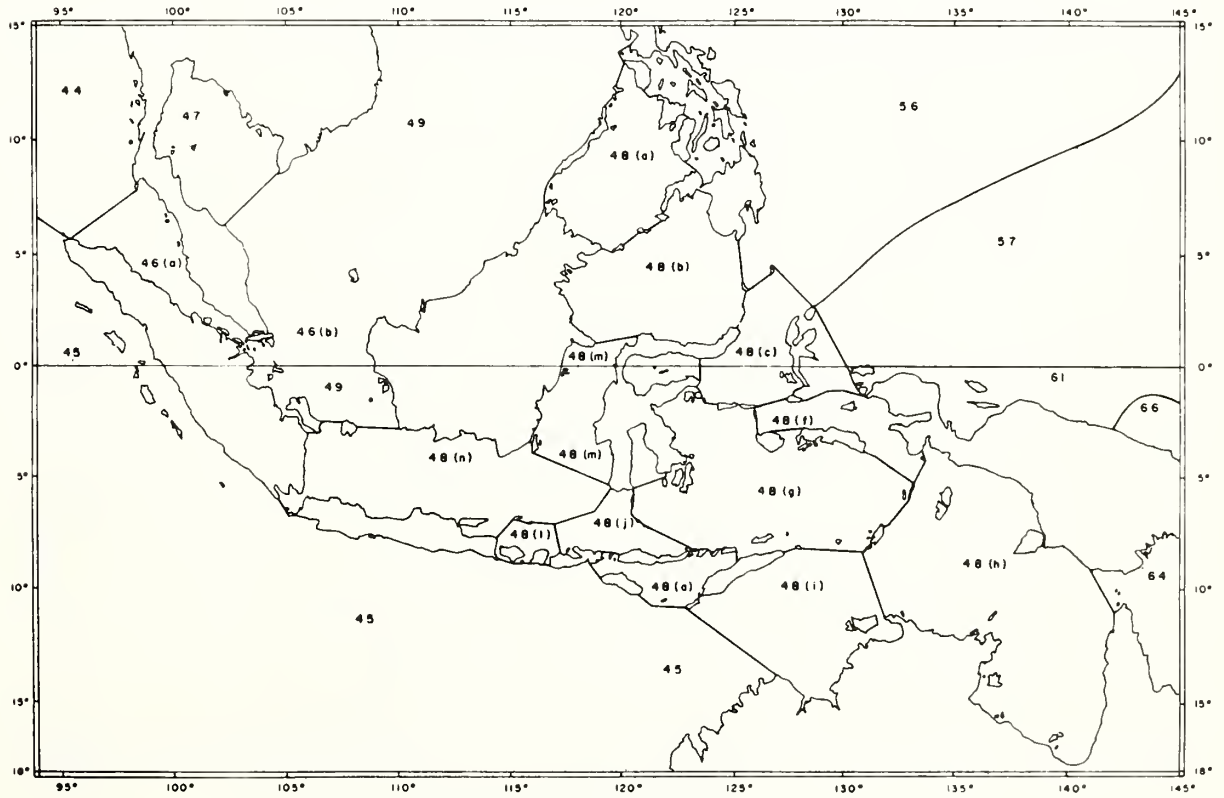

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4. BRAZIL
5. BURMA
6. CANADA
7. CHILE
8. COLOMBIA
9. DENMARK
10. ECUADOR
11. FINLAND
12. TAIWAN
13. FRANCE
14. GERMANY (Federal Republic)
15. GERMANY (Democratic Republic)
16. GHANA
17. GUATEMALA
18. ICELAND
19. INDIA
20. INDONESIA
21. IRELAND
22. ISRAEL
23. ITALY
24. JAPAN
25. MEXICO
26. NETHERLANDS
27. NEW ZEALAND
28. NORWAY
29. PAKISTAN
30. PERU
31. PHILIPPINES
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33. PORTUGAL
34. SPAIN
35. SWEDEN
36. SOUTH AFRICA
37. UNION OF SOVIET SOCIALIST REPUBLICS
38. UNITED KINGDOM
39. UNITED STATES OF AMERICA
40. URUGUAY
42. YUGOSLAVIA
43. KOREA (Republic of)
44. IVORY COAST
45. NIGERIA
46. CONGO (People's Republic)
47. MALAYSIA
48. MALAGASY REPUBLIC
49. MOROCCO
50. SENEGAL
51. THAILAND
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53. VENEZUELA
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57. HONDURAS
58. DOMINICAN REPUBLIC
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LIST OF INITIALS OF DATA CENTERS

AODC	Australian Oceanographic Data Centre
BNDO	Bureau National des Donnees Oceaniques, France
CEADO	Centro Argentino de Datos Oceanograficos
CECOLDO	Centro Colombiano de Datos Oceanograficos
CEDO	Centro Espanol de Datos Oceanograficos
CENADO	Centro Nacional de Datos Oceanograficos, Mexico
CENDOC	Centro Nacional de Datos Oceanograficos de Chile
CNRDO	Centro Nazionale Raccolta Dati Oceanografici, Italy
DOD	Deutsches Ozeanographisches Datenzentrum
ENODC	Egyptian National Oceanographic Data Center
FAOFDC	Food and Agriculture Organization of the United Nations, Fishery Data Centre
ICES	International Council for the Exploration of the Sea
IHO	International Hydrographic Organization
INODC	Indian National Oceanographic Data Center
JODC	Japan Oceanographic Data Center
KODC	Korean Oceanographic Data Center
MEDS	Marine Environmental Data Service, Canada
MIAS	Marine Information and Advisory Service, United Kingdom
NCOG	Nederlands Centrum voor Oceanografische Gegevens
NOD	Norsk Oseanografisk Datasenter
NODC	National Oceanographic Data Center, U.S.A.
PSMSL	Permanent Service for Mean Sea Level
SADCO	South African Data Centre for Oceanography

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PART II

CATALOGUE

EXPLANATION OF WDC-A, OCEANOGRAPHY, DATA INFORMATION SHEET

The Change Notice lists on Data Information sheets the data which have been received by this Center. The entries are described below. Countries are arranged in the sequence shown in the numerical list of countries. Data from each country are arranged in the sequence of catalogue numbers with the 100-series data sheets first, followed by the 200-series.

Country/Catalogue Number -- The country name and corresponding two-digit number under which the data are catalogued, as well as the identifying number for the data information, are given in this column. Details of the catalogue numbering system are given in the section How to Use Change Notices to the Catalogue of Data. The numbers corresponding to the country and institution portions of the Catalogue Number are found in the index section that lists countries and contributing institutions. In the Catalogue Number column beneath the Catalogue Number, the term "CAT. OF DATA" or "Change" followed by an asterisk, e.g. "Change 17*", indicates that data for this listed cruise represent an addition to data previously received by WDC-A, Oceanography, and already described under this Catalogue Number in the Catalogue of Data (including Change Notice Nos. 1-16) or the referenced Change Notice. The omission of this symbol in the Catalogue Number column is an indication that no data have been received for this cruise prior to this Change Notice. An asterisk (*) is also placed beside each data entry which represents an addition to data catalogued previously; the total number of observations held for this cruise is shown in parentheses ( ) beneath the data entry. Data entries preceded by a minus sign (-) and enclosed in parentheses, e.g. (-9), indicate a deletion of observations.

Ship/Fixed Station (Cruise) -- Names of ships are printed in capital letters; lightvessels are identified by (LV) following the name. All other names not so designated are those of shore stations and other types of fixed platforms, such as lighthouses (LH) or offshore towers; names are reported as they appear with the data. If a ship's cruise has an identifying number or name assigned by the originator or if it participated in a named expedition, that information is given beneath the ship name.

Period -- The dates during which the data were gathered. In some instances, depending on the nature of the project, the dates indicate the beginning and ending of a cruise or expedition, while in others the dates indicate the first and last observations. Months are in Roman numerals, the days and years in Arabic numerals, in the order of day/month/year. For shore and fixed stations months and years only are usually given.

Region -- The region(s) of the World Ocean where observations were gathered. The areas listed are defined in "Limits of Oceans and Seas," International Hydrographic Bureau, Special Publication No. 23, third edition, Monaco, 1953, with certain modifications as indicated in the Catalogue Indexes section. Latitudes and longitudes of fixed stations are shown as they appear with the data.

Oceanographic Serial Stations

Number of Stations -- The number of oceanographic serial stations (also referred to as hydrographic, hydrographical, hydrological and hydrochemical stations by various authorities) at which serial measurements of temperature, salinity, and other chemical values are made, normally to depths of five meters or greater. Data to depths less than five meters are usually catalogued as Surface Observations. The single dagger symbol (†) is used to denote data obtained by electronic, in-situ, Salinity/Temperature/Depth (STD) or Conductivity/Temperature/Depth (CTD) sensors.

Physical and Chemical Data -- The types of physical and chemical data, available at serial depths as observed and as computed values, are listed using the following symbols and abbreviations:

T - Temperature of the water sample
Cl - Chlorinity
S - Salinity
O_2 - Dissolved oxygen content
CO_2 - Carbon dioxide
pH - Hydrogen ion concentration
Alk - Alkalinity
N - Nitrogen compounds
P - Phosphorous compounds
Si - Silicon compounds
σ_t - Density of the water at T & S in-situ and at atmospheric pressure
δ - Anomaly of specific volume
δ_t - Thermosteric anomaly
ΔD - Anomaly of dynamic heights
PE - Potential energy
PT - Potential temperature
Q - Q factor for transport computations
V_s - Speed of sound

NOTE: Chemical compounds may also be indicated by standard chemical symbols.

Sample Depths -- The depth to which the predominant number of samples were taken is given to the nearest 100 meters, except when the observations are in water of less than 100 meters in depth, in which case it is usually given to the nearest 10 meters. When more than one significant level exists, these are indicated one below the other, or a range of levels is given.

Maximum Depth -- The maximum depth of sampling (depth of cast) is given.

BT's -- The type and number of mechanical bathythermograph (MBT) or expendable bathythermograph (XBT) observations are indicated by:

MB - Analog prints of bathythermographs taken by a mechanical BT
MTb - Tables or listings of mechanical BT temperature readings at selected depths
XB - Analog prints of bathythermographs taken by an expendable BT
XTb - Tables or listings of expendable BT temperature readings at selected depths
DTb - Tables or listings of digital BT temperature readings at selected depths

Currents -- The types and quantity of observations of surface and subsurface currents are indicated by:

Surf - Surface
Subs - Subsurface

Bottom Topography -- The types of topographic data available are indicated by:

D - Sounding depths at oceanographic stations
Pl - Plotting sheets with tracks and sounding depths recorded
Pro - Profiles of bottom relief
Tab - Tables of positions and sounding depths
Ch - Charts in bathymetric contours or in physiographic relief

Bottom Composition -- The types and quantity of available sea-bottom geological samples and marine geophysical measurements are indicated by:

Surf - Records of sea-bottom surface geological samples obtained by grabs, dredges, buckets, trawls, etc., and including data for chemistry; size distribution; mass physical properties; and radiological, paleontological, and mineralogical determinations
Core - Records of vertical subsurface geological samples obtained by coring tubes, drilling, etc., and including analyses for chemistry; size distribution; mass physical properties; and radiological, paleontological, and mineralogical determinations
Phot - Photographs of the bottom or of samples
Refr - Seismic refraction measurements
Refl - Seismic reflection measurements
GrPr - Gravity profiles from field measurements, free air, bouguer or isostatic anomalies
GrPl - Gravity plots from field measurements, free air, bouguer or isostatic anomalies
GrML - Machine listings of gravity measurements
MaPr - Magnetic profiles from field measurements
MaPl - Magnetic plots from field measurements
MaML - Machine listings of magnetics measurements
HF - Heat flow measurements in the bottom

Biological -- The types of marine biological observations made and the number of stations and/or abundance of data are indicated by any of the following categories:

Phyt - Phytoplankton
Pigm - Pigments
PrPr - Primary productivity
Zoo - Zooplankton
Nek - Nekton
Eggs - Fish eggs and/or larvae
Neus - Neuston
Pleu - Pleuston
Sest - Seston
Bent - Benthos
PeF - Pelagic fishes
DeF - Demersal fishes
Cet - Cetacea
Micr - Microbiological data
Biol - Bioluminescence
Poll - Pollution studies
Surf - Surface visual observations of birds, fishes, mammals, reptiles and discolored water
FObs - Fishery observations
C14 - Carbon
Bore - Borers and foulers

Meteorological -- The types of meteorological observations taken in conjunction with oceanographic data are indicated by:

Wd - Wind direction and speed
W - Weather
Ta - Temperature of the air, dry bulb
Tw - Temperature of the air, wet bulb
Bar - Atmospheric pressure, barometer
Cld - Clouds
Vis - Visibility
Hum - Humidity
DP - Dew point
Pre - Precipitation
SoRa - Solar radiation
Rad - Radiosonde observations

Sea Surface -- The types of sea surface observations and measurements taken are listed. In addition to the abbreviations and symbols listed for Physical and Chemical Data, the following are also used:

Col - Color of the water
Tra - Transparency of the water
Wa - Visual data on waves, including sea state
IWa - Instrumented wave data

Ice - Data on ice in the sea
LP - Light penetration
LPW - Long period wave records
T,S,etc.$_{10,20}$ - Temperature, Salinity or other values at depths in meters below the surface as indicated by subscript. Thus, T_{10} = temperature at 10 meters. These are data that for various reasons are not included under Oceanographic Serial Stations.

Data Center Reference Number -- Data which have been processed by Automatic Data Processing (ADP) machine methods at a national, regional, or responsible oceanographic data center, usually have been assigned some type of identifying reference number by that center. The availability of data in punched card, magnetic tape, or machine listing format is indicated by the initials of the data center followed by that center's reference number. For example, machine-processed oceanographic station data for Reference Number 310863 of the National Oceanographic Data Center would appear as NODC 310863. As a means of identifying those types of data that have been machine-processed and thus correspond to the Reference Number, the Maltese Cross symbol (✠) is entered in the appropriate columns describing data that are automated under that Reference Number.

WDC-A Accessioned Publications Number -- The Catalogue Number from the WDC-A, Oceanography Catalogue of Accessioned Publications or yearly Supplements identifying the published report in which the referenced data appear. A blank in this column indicates that the data were not received in published form.

Remarks -- The double dagger symbol (‡) in the WDC-A Accessioned Publications Number column indicates that additional, descriptive remarks pertaining to these data may be found in the Remarks Section, which immediately follows the main Catalogue Section in this Change Notice.

NOTE: Track charts showing locations of oceanographic observations are not printed in this Change Notice. If a track chart is available for a particular cruise, that information will be given in the Remarks Section of this Change Notice. WDC-A will gladly provide copies of such track charts upon request.

WDC - A, OCEANOGRAPHY DATA INFORMATION

COUNTRY CATALOGUE NUMBER (*)	SHIP/FIXED STATION (CRUISE)	PERIOD	REGION (IHB)	TYPES OF OBSERVATIONS											DATA CENTER REFERENCE NUMBER	WDC-A ACC. PUBS. NUMBER
				OCEANOGRAPHIC SERIAL STATIONS				BATHY-THERMO-GRAPH	CURRENTS	BOTTOM TOPO-GRAPHY	BOTTOM COMPO-SITION	BIOLOGICAL	METEOR-OLOGICAL	SEA SURFACE		
				NO. OF STAS.	PHYS. AND CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH									
2. AUSTRALIA																
102.6 A-4 (Change 22)	DERWENT, etc. (DIAMANTINA) *	12.-16.IV.1974 *	45b,62					XTb-96 ✠ * (951)							NODC (BT): 60341 *	
102.6 A-6 (Change 22)	DERWENT, etc. (DIAMANTINA) *	19.-26.III. 1976 *	45b					XTb-125 ✠ * (1,112)							NODC (BT): 60342 *	
102.6 A-16	ADELAIDE, etc. ‡	15.I.-15.XII. 1981 ‡	‡					XTb-689 ✠ ‡							NODC (BT): ‡	
102.6 A-17	ADELAIDE, etc. ‡	10.VI.1981-3.XII.1982 ‡	‡					XTb-1,067 ✠ ‡							NODC (BT): ‡	
102.6 A-18	CANBERRA, etc. ‡	2.III.-14.VI. 1983 ‡	‡					XTb-488 ✠ ‡							NODC (BT): ‡	
102.6 A-19	PARRAMATTA, etc. ‡	30.III.-18.XI. 1984 ‡	‡					XTb-542 ✠ ‡							NODC (BT): ‡	
3. BELGIUM																
103.2 A-1	RECTEUR DUBUISSON (Cruise CIM/ MEDALPEX)	19.XI.1981; 5.,8.,27.III. 1982	28A					MTb-15								
103.3 A-1	Ship not identified (Belgian Naval Vessel)	16.V.-10.VI. 1961	28Ab	152	(T,S,σ_t) ✠	50-350	496			D ✠					ICES 2604	
4. BRAZIL																
104.1 A-45	ALMIRANTE SALDANHA (Cruise 100, CABO FRIO VII)	24.III.-2.IV. 1983	32b	59	T,S,O_2,PO_4, NO_2,NO_3,SiO_4, pH	20-180	718			D			Wd,W,Ta,Tw, Cld,Bar,Vis	Wa		
104.1 A-46	ALMIRANTE SALDANHA (Cruise 101, SUESTE II)	3.-31.V.1983	32b	91	T,S,O_2,PO_4, NO_2,NO_3,SiO_4, pH	20-1300	2013			D			Wd,W,Ta,Tw, Cld,Bar,Vis	Wa,Col, Tra		
104.1 A-47	ALMIRANTE SALDANHA (Cruise 103, BARRA NORTE II, NORTE III)	27.VII.-10. VIII.1983	23a,32b	25	T,S,O_2,PO_4, NO_3,SiO_4,pH	20-1200	1489			D			Wd,W,Ta,Tw, Cld,Bar,Vis	Wa,Col		
104.1 A-48	ALMIRANTE SALDANHA (Cruise 105, SUESTE III)	19.II.-26.III. 1984	32b	92	T,S,O_2,PO_4, NO_2,NH_4,SiO_4, pH	40-1100	2334			D			Wd,W,Ta,Cld, Bar	Wa		

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WDC - A, OCEANOGRAPHY DATA INFORMATION

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				OCEANOGRAPHIC SERIAL STATIONS				BATHY-THERMO-GRAPH	CURRENTS	BOTTOM TOPO-GRAPHY	BOTTOM COMPO-SITION	BIOLOGICAL	METEOR-OLOGICAL	SEA SURFACE		
				NO. OF STAS.	PHYS. AND CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH									
104.1 D-4	ALMIRANTE CAMARA (Cruise 99, GEOCOSTA SUL I)	15.IV.-2.V. 1983	32b	48	T,S	9-25	25			D			Wd,W,Ta,Tw, Cld,Bar,Vis	(T,S)-1 Wa		
104.1 D-5	ALMIRANTE CAMARA (Cruise 104, GEOMAR XXI)	10.-11.XI.1983	32b	7	T,S	5-10	19			D				(T,S)-4 Tra		
104.2 B-3	PROFESSOR W. BESNARD (Cruise 2-70)	2.-5.II.1970	32b	33	(T,S,O_2,σ_t, ΔD,Vs) ✠	20-280, 950-1145	1145			D ✠			(Wd,Cld) ✠		NODC 140011	
6. CANADA																
106.1 C-10	WHITETHROAT	1.-11.VI.1960	57b,59	59	(T,S,O_2,σ_t, Vs) ✠	50-600	625			D ✠			(Wd,Ta,Tw, Cld,Bar) ✠	Wa ✠	NODC 180929	
106.4 G-1	VANCOUVER, QUADRA, G. B. REED	24.VIII.-24. IX.1965;11.-24.IX.1969; 31.X.-9.XII. 1970	57b,59 (OWS "P")					XTb-153 ✠							NODC (BT): 55696-55698;64795, 64796	
106.4 G-2	VANCOUVER, QUADRA, G. B. REED	9.I.1971-6.I. 10.-25.IX. 1972	57b,59 (OWS "P")					XTb-184 ✠							NODC (BT): 55699-55713,64797, 64798,65136, 65137	
106.9 CC-1	DAWSON, HUDSON	1.I.1970-31. XII.1973	23a,23b					XTb-472 ✠							NODC (BT): 55752-55756	
106.9 CC-2	DAWSON	1.I.1974-31. XII.1977	23b					XTb-512 ✠							NODC (BT): 55757-55762	
106.9 CC-3	DAWSON, HUDSON	8.-14.V.1978; 11.IX.-2.X. 1979	23b					XTb-71 ✠							NODC (BT): 64894-64895	
106.10 E-1	GADUS ATLANTICA, etc. ‡	1.I.1978-31. XII.1980	15,15A 23b,24					XTb-3,314 ✠							NODC (BT): ‡	
106.10 E-2	GADUS ATLANTICA, etc. ‡	1.I.1981-31. XII.1982	15A,23b 24					XTb-3,258 ✠							NODC (BT): ‡	
106.11 V-2	ALFRED NEEDLER (Cruise 83-22)	18.-29.XI. 1983	24	98	(T,S,σ_t,δ,ΔD Vs) ✠	95-980	991			D ✠				(T,S,σ_t,δ, ΔD,Vs)-1 ✠	NODC 181549	
106.11 V-3	ALFRED NEEDLER (Cruises 84-02, etc. ‡)	2.III.-2.VIII. 1984 ‡	24	311	(T,S,σ_t,δ,ΔD Vs) ✠	20-335	353			D ✠				(T,S,σ_t,δ, ΔD,Vs)-16 ✠	NODC 181550 - 181553 ‡	

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				OCEANOGRAPHIC SERIAL STATIONS				BATHY-THERMO-GRAPH	CURRENTS	BOTTOM TOPO-GRAPHY	BOTTOM COMPO-SITION	BIOLOGICAL	METEOR-OLOGICAL	SEA SURFACE		
				NO. OF STAS.	PHYS. AND CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH									
106.11 W-1	A.T. CAMERON, E.E. PRINCE	1.I.1971-31. XII.1977	23b,24, 25					XTb-421 ✠							NODC (BT): 55714-55733	
106.11 W-2	A.T. CAMERON, etc. ‡	1.I.1978-31. XII.1979	23b,24, 25					XTb-2,123 ✠							NODC (BT): ‡	
106.11 W-3	A.T. CAMERON, etc. ‡	1.I.1980-31. XII.1981	23b,24, 25					XTb-2,848 ✠							NODC (BT): ‡	
106.11 W-4	LADY HAMMOND, etc. ‡	1.I.1982-31. XII.1983	23b,24, 25					XTb-1,837 ✠							NODC (BT): ‡	
106.11 W-5	E.E. PRINCE, etc. ‡	1.I.1984-31. XII.1985	23b,25					XTb-487 ✠							NODC (BT): ‡	
106.13 D-1	G.B. REED, Ship not identified	1.I.1973-31. XII.1974;1.I. 1976-31.XII. 1979	57b,59					XTb-801 ✠							NODC (BT): 65519-65550	
106.13 D-2	G.B. REED, Ship not identified	1.I.1980-31. XII.1982	57b,59					XTb-330 ✠							NODC (BT): 65551-65567	
106.22 A-2	VECTOR, ENDEAVOUR (Cruises 82-01, 82-02, 83-02, 83-04)	17.-20.V.,13.-15.VIII.1982; 17.-27.V.,30. VI.-6.VIII. 1983	57b,59									Pigm-81 PrPr-81				06.17-097
106.22 A-3	VECTOR	5.-6.X.1983	59									Bent-15				06.17-105
106.22 A-4	ENDEAVOUR	29.VI.-10.VII. 1983	57b,59	85 †	T,S,O_2,NO_3, PO_4,SiO_4	50-250	255					Zoo-31 Phyt-64 Pigm-89 PrPr-21		(T,S)-7		06.17-107
106.22 O-2	Aircraft	19.III.-6.IV. 1982	14	70 †	T,S,σ_t,ΔD, Vs	40-500	525			D						06.17-104
106.22 P-1	ALFRED NEEDLER	6.-22.I.1985	23b					XTb-162 ✠							NODC (BT): 65693	
106.22 P-2	J.E. BERNIER, ST. BARNABE, Ship not identified	16.III.1979-8.XII.1980	24					XTb-589 ✠							NODC (BT): 65498-65512, 65691, 65692	
106.23 C-1	QUEBECOIS, CRYOS	1.I.1973-31. XII.1974	24					XTb-582 ✠							NODC (BT): 55745, 55746 55748-55751	
106.23 C-2	QUEBECOIS, G.C. MCDONALD	1.I.1975-31. XII.1979	24					XTb-374 ✠							NODC (BT): 64889-64893, 65212	

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				OCEANOGRAPHIC SERIAL STATIONS				BATHY-THERMO-GRAPH	CURRENTS	BOTTOM TOPO-GRAPHY	BOTTOM COMPO-SITION	BIOLOGICAL	METEOR-OLOGICAL	SEA SURFACE		
				NO. OF STAS.	PHYS. AND CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH									
106.24 A-1	J.L. HART (Cruise 84-09)	4.-7.IX.1984	24	13	(T,S,σ_t,δ,ΔD,Vs) ✠	14-32	65			D ✠				(T,S,σ_t,δ,ΔD,Vs)-19 ✠	NODC 181554	
106.25 A-1	G.B. REED	7.-24.IX.1973; 9.IV.1975-26.II.1976;27.VI.-12.VII.1979	57b,59					XTb-239 ✠							NODC (BT): 65694-65698	
106.26 A-1	BRANDAL, BEDEQUE, E.E. PRINCE	15.X.1973-18.VI.1975	23b,24,25					XTb-150 ✠							NODC (BT): 55593, 55689-55695	
106.27 A-1	ANNAPOLIS, etc. ‡	31.X.1968-31.XII.1970	4,6,15A,16,16A,18,21,23a,23b,24,27,28A,28Ab 28Ac					XTb-1,026 ✠							NODC (ET): 55873-55917, 55922-55926	
106.27 A-2	ALGONQUIN, etc. ‡	1.I.1971-31.XII.1974	4,6,15,15A,16,16A,23a,23b,24,26,27,28A,28Ab 28Ae,57b 59					XTb-2,925 ✠							NODC (BT): 55918-55921, 55927-56110, 64933,64934	
106.27 A-3	ALGONQUIN, etc. ‡	1.I.1975-31.XII.1978	2,3,4,6,15A,16,16A,19,21,22,23a,23b,24,27,28A,28Aa,28Ab,32b,57b,59					XTb-3,645 ✠							NODC (BT): 56111-56253, 64935-64977, 65216-65228, 65616-65622	
106.27 A-4	ALGONQUIN, etc. ‡	1.I.1979-31.XII.1982	1,2,3,4,6,18,19,21,22,23a 23b,24,25,26,27 28A,28Aa 28Ab, 28Ad, 28Ae,28B 28Bf					XTb-3,641 ✠							NODC (ET): 64978-65021, 65229-65324, 65623-65650	
106.27 A-5	ALGONQUIN, etc. ‡	1.I.1983-31.XII.1985	4,6,21,23a,23b,27,28A,28Aa,28Ab,28Ae					XTb-756 ✠							NODC (ET): 65325-65332, 65334-65368, 65370,65651-65656	

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				OCEANOGRAPHIC SERIAL STATIONS				BATHY-THERMO-GRAPH	CURRENTS	BOTTOM TOPO-GRAPHY	BOTTOM COMPO-SITION	BIOLOGICAL	METEOR-OLOGICAL	SEA SURFACE		
				NO. OF STAS.	PHYS. AND CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH									
106.28 A-1	CHAUDIERE, etc. ‡	1.I.1969-31. XII.1972	50,53,55, 56,57a, 57b,58, 59,61a, 63					XTb-1,429 ✠							NODC (ET): 56254-56328	
106.28 A-2	CHAUDIERE, etc. ‡	1.I.1973-31. XII.1976	23b,27, 49,50,52, 56,57a, 57b,59					XTb-2,112 ✠							NODC (ET): 56329-56450	
106.28 A-3	ATHABASKAN, etc. ‡	1.I.1977-31. XII.1980	49,50,52, 56,57a, 57b,59, 61a,61b, 63,64					XTb-2,046 ✠							NODC (ET): 52531, 56451-56521, 65371-65429, 65657-65659	
106.28 A-4	GATINEAU, etc. ‡	1.I.1981-31. XII.1984	49,50,52, 56,57a, 57b,61a, 63,64					XTb-1,748 ✠							NODC (ET): 65430-65497, 65660-65690	
206.8 (Change 34)	Coastal and Light Stations	1.I.1982-31. XII.1983 *	57b,59													06.17-103 06.17-106
206.8 E-4	PARIZEAU, ENDEAVOUR, PANDORA II, VECTOR (Cruises 1-22)	30.I.1979-7. IX.1981 ‡	57b	411 † ‡	T,S,σ_t,O_2	50-350	358									06.17-098
206.8 E-5	PARIZEAU, VECTOR (Cruises 02 thru thru 05) ‡	6.XII.1981-28. IX.1982 ‡	59	41 †	T,S,σ_t,O_2, PO_4,NO_3,Si	75-500	500					Pigm-18		(O_2,PO_4, NO_3,Si)-9 ‡		06.17-099
206.8 E-6	PARIZEAU, ENDEAVOUR, PANDORA II (Cruises 79-12 thru 80-14) ‡	6.V.1979-10. IX.1980 ‡	57b	458 †	T,S,σ_t,δ,ΔD, Vs,PE	30-1500	1500							O_2-236 ‡		06.17-100
206.8 E-7	PARIZEAU, ENDEAVOUR, PANDORA II, VECTOR (Cruises 1 thru 22) ‡	30.I.1979-6. IX.1981 ‡	57b	390 †	T,S,σ_t,O_2	40-550	555			D						06.17-101
206.8 H-1	VANCOUVER, PARIZEAU, QUADRA	1.I.1972-31. XII.1975	57b,59					XTb-599 ✠							NODC (ET): 55763-55799, 55805,55807, 55816-55819	

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				OCEANOGRAPHIC SERIAL STATIONS				BATHY-THERMO-GRAPH	CURRENTS	BOTTOM TOPO-GRAPHY	BOTTOM COMPO-SITION	BIOLOGICAL	METEOR-OLOGICAL	SEA SURFACE	
				NO. OF STAS.	PHYS. AND CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH								
206.8 H-2	VANCOUVER, QUADRA	1.I.1976-31. XII.1978	57b,59					XTb-3,142 ✠							NODC (BT): 55820-55868, 64897, 65831-65841	
206.8 H-3	VANCOUVER, QUADRA	1.I.1979-13. V.1981	57b,59					XTb-2,388 ✠							NODC (BT): 55869-55872, 64898-64928, 65213,65841-65844	
9. DENMARK																
109.2 E-12	ADOLF JENSEN	9.I.-23.XI. 1979	15	67	(T,S) ✠	40-600	600			D ✠					ICES 26C4	
109.2 E-13	ADOLF JENSEN	21.I.-29.XI. 1980	14A,15	131	(T,S) ✠	30-600	1200			D ✠				T-4 ‡	ICES 26C4	
109.2 E-14	ADOLF JENSEN	30.III.-6.XII. 1981	14A,15	122	(T,S) ✠	40-600	1000			D ✠					ICES 2604	
109.2 E-15	ADOLF JENSEN	14.I.-11.XI. 1982	14A,15	155	(T,S,PO_4, Ptotal,NO_2, NO_3)	40-800	1200			D ✠					ICES 2604	
109.5 A-1	MARTIN KNUDSEN	12.II.-6.XII. 1979	23a	93	(T,S,PO_4, Ptotal,NO_2, NO_3) ✠	40-100	150								ICES 2606	
109.5 A-2	MARTIN KNUDSEN	7.I.-3.XII. 1980	23a	83	(T,S,PO_4, Ptotal,NO_2, NO_3) ✠	20-100	180								ICES 2606	
109.5 A-3	MARTIN KNUDSEN	20.-22.I.,9.-12.III.1981	23a	17	(T,S,PO_4, Ptotal,NO_2, NO_3) ✠	20-50	57								ICES 2606	
109.5 B-1	GUNNAR THORSON	13.VII.-12.XI. 1981	23a	47	(T,S,PO_4, Ptotal,NO_2, NO_3) ✠	12-50	55							PO_4-2 ‡	ICES 2613	
109.5 B-2	GUNNAR THORSON	12.I.-11.XI. 1982	23a	117	(T,S,PO_4, Ptotal,NO_2, NO_3) ✠	10-100	108								ICES 2613	
109.5 B-3	GUNNAR THORSON	7.II.-28.X. 1983	18,23a	185	(T,S,PO_4, Ptotal,NO_2, NO_3) ✠	10-100	400								ICES 2613	
13. FRANCE																
113.3 H-14	CAPRICORNE (Cruises 002, 004, FOCAL 2 & 4)	12.I.-6.II., 2.-31.VII. 1983	23a,32a, 32b	127	T,S,O_2	500	500			D			Wd,Ta,Tw, Cld			

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				NO. OF STAS.	PHYS. AND CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH								
213.1 B-3	LE BRIX	25.III.,13., 23.IX.,11.X. 1957;15.II., 3.X.1961	23a (OWS"A")	6	(T,S) ✠	1900-2500	2530								ICES 3550
14. GERMANY (FED. REP.)															
114.1 C-42	GAUSS (Cruise 277)	29.-31.III. 1977	4							D ✠			(Wd,Ta,Cld) ✠	(S-50) ✠	DOD 77089
114.1 C-43	GAUSS (Cruise 307)	19.-21.IX.1978	4							D ✠			(Wd,Ta,Cld) ✠	(S-30) ✠	DOD 78128
114.1 M-31	Ship not identified (Ship of Opportunity) (Cruises 1-3, 12-15, 27-28, IGOSS) ‡	22.V.1983-1.I 1984 ‡	23a,32b					XTb-204 ✠ ‡		D ✠			(Wd,Ta,Tw) ✠		DOD ‡
114.1 M-32	Ship not identified (Ship of Opportunity) (Cruises 4, 6-8, 18, IGOSS)	2.II.-25.X. 1984 ‡	23a,32a, 32b					XTb-147 ✠ ‡		D ✠			(Wd,Ta,Tw) ✠		DOD ‡
114.1 M-33	Ship not identified (Ship of Opportunity) (Cruises 1, 2, 4, 12, 16, BALMON)	22.V.1983-20. XI.1984	1,23a, 23b	45 ‡	(T,S,O_2,PO_4-P, Ptotal,NO_2-N, NO_3-N,NH_4-N, Ntotal,SiO_4-Si,pH) ✠	10-25	27	XTb-84 ✠ ‡		D ✠			(Wd,Ta,Tw) ✠		DOD ‡
114.1 M-34	Ship not identified (Chartered Ship)(Cruise 01)	31.VIII.-20. IX.1980	5,15A, 23a,23b					XTb-25 ✠		D ✠			Ta ✠		DOD 80067
114.1 Q-5	GAUSS II (Cruise 51)	24.VIII.-15. IX.1983	1,4	67	(T,S,O_2,PO_4-P, Ptotal,NO_2-N, NO_3-N,NH_4-N, Ntotal,H_2S-S, pH) ✠	10-40	92			D ✠			(Wd,W,Ta, Cld) ✠	Wa ✠	DOD 83132
114.1 Q-6	GAUSS II (Cruise 65/1)	21.-29.VIII. 1984	1	35	(T,S,O_2,PO_4-P,Ptotal, NO_2-N,NO_3-N, NH_4-N,SiO_4-Si pH) ✠	10-28	28			D ✠			(Wd,W,Ta, Cld) ✠	Wa ✠	DOD 84109
114.2 B-8	ALKOR	7.-8.I.,23-24. II.,13.IV.,1. VII.,5.-6.X. 1981	1	15	(T,S,O_2,PO_4-P, P_{total}, NO_2-N, NO_3-N,NH_4-N, Ntotal,H_2S-S, pH,Alk) ✠	20-26	26								DOD 83142

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WDC - A, OCEANOGRAPHY DATA INFORMATION

COUNTRY CATALOGUE NUMBER (*)	SHIP/FIXED STATION (CRUISE)	PERIOD	REGION (IHB)	TYPES OF OBSERVATIONS											DATA CENTER REFERENCE NUMBER	WDC-A ACC. PUBS. NUMBER
				OCEANOGRAPHIC SERIAL STATIONS				BATHY-THERMO-GRAPH	CURRENTS	BOTTOM TOPO-GRAPHY	BOTTOM COMPO-SITION	BIOLOGICAL	METEOR-OLOGICAL	SEA SURFACE		
				NO. OF STAS.	PHYS. AND CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH									
114.2 B-9	ALKOR	5.-6.I.,13.IV.-24.-25.VIII.,11.-12.X.,1.-2.XII.1982	1	15	(T,S,O_2,PO_4-P,Ptotal, NO_2-N,NO_3-N, NH_4-N,Ntotal, pH,Alk) ✠	24-28	28								DOD 83143	
114.2 C-13	ANTON DOHRN (Cruise 207, IGOSS)	31.VII.-25.VIII.1978	4	25	T ✠	20-150	150	XTb-156 ✠		D ✠			(Wd,Ta) ✠		DOD 78091	
114.2 D-3	HERMANN WATTENBERG	24.-26.VI.1957	2	16	(T,S,σ_t,δ, ΔD,Vs) ✠	20-70	70			D ✠					NODC 060853	
114.4 A-7	UTHORN	20.VI.-14.XII.1983 ‡	4	39 ‡	(T,S) ✠	5-40	40						(T,S)-2 ✠ (PO_4-P,NO_2-N SiO_4-Si)-35 ✠		DOD ‡	
114.4 A-8	UTHORN	9.-10.I.1984	4	12	(T,S) ✠	15-45	45						(PO_4-P,NO_2-N SiO_4-Si)-12 ✠		DOD 84C40	
114.4 C-16	FRIEDRICH HEINCKE (Cruise 173)	2.-6.XII.1980	4										(T,S)-42 ✠ ‡		DOD 80065	
114.4 C-17	FRIEDRICH HEINCKE (Cruises 183/8 & 191)	1.-4.II.,9.-21.XI.1982	4,23a, 28Aa					XTb-28 ✠					(T,S,O_2)-56 ✠ ‡		DOD 83022, 84013	
114.4 C-18	FRIEDRICH HEINCKE (Cruise 203)	19.-24.XI.1983	28Aa, 28Ab					XTb-16 ✠							DOD 84C06	
114.6 B-4 (Change 16)	ANTON DOHRN (Cruise 170)	5.-12.XII.1973	4					MTb-43 ✠ *							DOD 74C20 *	
114.6 C-2	VICTOR HENSEN (Cruise 38 & 48, PRE-FLEX)	7.-12.X.,5.-7.XII.1975	4											(T,S)-37 ✠	DOD 84C19 84020	
114.6 C-3	VICTOR HENSEN (Cruise 26, FLEX)	27.-30.III.1976	4	3	(T,S) ✠	120-130	130							(T,S)-25 ✠	DOD 84C21	
114.6 C-4	VICTOR HENSEN (Cruises 21 & 79)	7.-8.V.,2.-10.XII.1977	4	8	(T,S) ✠	110	110							(T,S)-37 ✠	DOD 84C24 84026	
114.6 C-5	VICTOR HENSEN (Cruises 23, 37, 53, 81)	5.IV.-15.XII.1978	4	14	(T,S) ✠	110	110							(T,S)-85 ✠	DOD ‡	
114.6 C-6	VICTOR HENSEN (Cruises 45 & 58)	2.-4.VIII.,20.IX.1982	4	3	(T,S,O_2) ✠	13-18	18			D ✠				(T,S,O_2)-27 ✠ ‡	DOD 83C83 83084	
114.7 A-17 (Change 31)	ANTON DOHRN (Cruise 224)	24.I.-3.II.1981	4					MTb-9 ✠ *							DOD 81C39	
114.7 A-21 (Change 34)	ANTON DOHRN (Cruise 229/3)	16.-28.IX.1981	4 (1,2,3)*	60 *	(T,S) ✠ *	55-150	150								DOD 81C40 *	

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				OCEANOGRAPHIC SERIAL STATIONS				BATHY-THERMO-GRAPH	CURRENTS	BOTTOM TOPO-GRAPHY	BOTTOM COMPO-SITION	BIOLOGICAL	METEOR-OLOGICAL	SEA SURFACE		
				NO. OF STAS.	PHYS. AND CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH									
114.7 A-24	ANTON DOHRN (Cruises 245 & 247, IGOSS)	10.-28.VII., 12.-18.XI. 1983	4,23a, 23b					XTb-94 ✠		D ✠			Wd ✠	T ✠	DOD 83124, 83156	
114.7 A-25	ANTON DOHRN (Cruise 250)	7.II.-6.III. 1984	4,6	100	(T,S,σ_t,Vs, PO_4-P,NO_3-N, NH_4-N,SiO_4-Si) ✠	20-300	324	MTb-100 ✠		D ✠			(Wd,W,Ta, Tw,Cld) ✠	Wa ✠	DOD 84075	
114.7 A-26	ANTON DOHRN (Cruise 258)	5.II.-5.III. 1985	4,6	124	(T,S,σ_t) ✠	20-185	185			D ✠			(Wd,W,Ta, Tw,Cld) ✠	Wa ✠	DOD 85059	
114.7 B-11	WALTHER HERWIG (Cruises 69 & 73/2)	8.-28.I.,26. VII.-15.VIII. 1977	5,6,21, 22,23a	12	(T,S) ✠	130-750	758	MTb-42 ✠		D ✠			(Wd,Ta) ✠	Wa ✠	DOD 77064, 84034	
114.7 B-12	WALTHER HERWIG (Cruise 78)	24.IV.-15.V. 1979	15,15A, 23a,23b					MTb-20 ✠		D ✠			(Wd,W,Ta, Cld) ✠	Wa ✠	DOD 79054	
114.7 B-13	WALTHER HERWIG (Cruise 89/2)	21.-22.III. 1981	32b,SO					XTb-4 ✠		D ✠			(Wd,W,Ta, Cld) ✠	Wa ✠	DOD 81077	
114.11 A-6	ANTON DOHRN (Cruise 230)	12.-22.X.1981	4							D ✠			Wd ✠	(T,S,σ_t, Vs)-54 ✠ ‡	DOD 84076	
114.11 B-6	SOLEA (Cruises 15, 33, 47, 65, 77)	3.VI.1975-10. IV.1979 ‡	4,6	58 ‡	(T,S) ✠	11-100	179			D ✠					DOD ‡	
114.11 B-7	SOLEA (Cruises 97, 99, 101)	30.IV.-13. VII.1980 ‡	4	26 ‡	(T,S) ✠	11-48	48			D ✠					DOD ‡	
114.11 B-8	SOLEA (Cruises 116, 120)	25.-27.IV.-25 VI.-1.VII. 1981	4	5	(T,S) ✠	16-43	43			D ✠				T-1 ✠	DOD 81069 81071	
114.11 B-9	SOLEA (Cruises 136, 139, 141)	24.IV.-18. VIII.1982 ‡	4	6 ‡	(T,S) ✠	11-37	37			D ✠			Wd ✠	(T,S,O_2)-76) ✠ ‡	DOD ‡	
114.11 B-10	SOLEA (Cruise 162)	21.X.-2.XI. 1983	1	11	(T,S,O_2) ✠	30-100	111			D ✠					DOD 83155	
114.11 B-11	SOLEA (Cruises 167, 170)	25.-27.I.,7. -17.III.1984	1	14	(T,S,O_2) ✠	20-110	110			D ✠					DOD 84036 84045	
114.12 A-1	POLARSTERN (Cruise 004/2)	24.X.-9.XI. 1983	45e, SO					XTb-33 ✠		D ✠					DOD 84102	
214.1	BORKUMRIFF (LV), etc. ‡	1.I.-31.XII. 1984	1,4 ‡	144	T,S	24-28	28		Surf-10,577 ‡				Wd	T,S Wa		14.02-155
214.2 A-1	HERMANN WATTENBERG	29.IV.-20.XII. 1957	1	19	(T,S,σ_t,δ,ΔD Vs) ✠	26	27								NODC 060853	

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				OCEANOGRAPHIC SERIAL STATIONS				BATHY-THERMO-GRAPH	CURRENTS	BOTTOM TOPO-GRAPHY	BOTTOM COMPO-SITION	BIOLOGICAL	METEOR-OLOGICAL	SEA SURFACE	
				NO. OF STAS.	PHYS. AND CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH								
16. GHANA															
116.1 E-2	KAKADIAMAA	16.I.-21.X. 1980	34	162	(T,S,σ_t,ΔD, Vs,O_2) ✠	15-100	100			D ✠			(Wd,Ta,Tw, Cld,Bar) ✠	(Wa,Col, Tra) ✠	MODC GHC034	
18. ICELAND															
118.1 G-9	HAFTHOR	6.-13.XI. 1980	5,23a	42	(T,S) ✠	60-400	655			D ✠			(Wd,W,Ta, Cld) ✠	Wa ✠	ICES 4610	
118.1 J-13	ARNI FRIDRIKSSON	16.III.-29. VIII.,26.XI. -11.XII.1979	5,6,23a	465	(T,S,PO_4, NO_3,SiO_4) ✠	100-1000	1760			D ✠			(Wd,W,Ta, Cld) ✠	Wa ✠	ICES 4603
118.1 J-14	ARNI FRIDRIKSSON	6.I.-16.XII. 1980	5,6,23a	295	(T,S) ✠	15-1200	1230			D ✠			(Wd,W,Ta, Cld) ✠	Wa ✠	ICES 4603
118.1 L-9	BJARNI SAEMUNDSSON	6.I.-16.XII. 1979	5,6,23a	193	(T,S,PO_4, NO_3,SiO_4) ✠	20-600	680			D ✠			(Wd,W,Ta, Cld) ✠	Wa ✠	ICES 4605
118.1 L-10	BJARNI SAEMUNDSSON	7.II.-30.IX. 1980	5,6,23a	387	(T,S,O_2,PO_4, NO_3,SiO_4) ✠	30-2500	2500			D ✠			(Wd,W,Ta, Cld) ✠	Wa ✠	ICES 4605
20. INDONESIA															
120.1 A-34	SAMUDERA	14.-26.XI. 1982	48c	30	T,S, σ_t,O_2, PO_4,NO_3,SiO_3	250-950	967	MTb-28	Subs-28 ‡	D		Zoo-24 Phyt-24 Pigm-24 Sest-24 Micr-24	Wd,W,Ta,Tw, Cld,Bar	T Tra		20.02-026
120.1 A-35	SAMUDERA	16.IV.-1.V. 1983	48f,57a, 61a	24	T,S,σ_t,O_2, PO_4,NO_3,SiO_3 pH	50-1200	1200	MTb-23		D		Zoo-24	Wd,W,Ta,Tw, Cld,Bar	Tra		20.02-027
23. ITALY															
123.4 E-1	Ship not identified (Ferry Boat) (Cruise CIM/ MEDALPEX)	6.III.-27.IV. 1982	28Ae					MTb-391					Wd,Ta,Tw, Cld,Bar	Tra		
24. JAPAN															
124.1 B-75 (Change 35)	RYOFU MARU (Cruise KER)	19.I.-17.X. 1983	50,56, 57a,61a		✠ *			MTb- *(-223) 128 ✠ (XTb-165 DTb-58) ✠ *		✠ *		✠ *	✠ *	✠ *	JODC 49831101 49831103 49831104 49831106	24.09-480

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				OCEANOGRAPHIC SERIAL STATIONS				BATHY-THERMO-GRAPH	CURRENTS	BOTTOM TOPO-GRAPHY	BOTTOM COMPO-SITION	BIOLOGICAL	METEOR-OLOGICAL	SEA SURFACE		
				NO. OF STAS.	PHYS. AND CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH									
124.2 B-55	OSHORO MARU (Cruises 1-4)	10.II.-5.IX. 1984 ‡	50,55, 57a,57b 58	119 † ‡	T,S, δ, δ_t, ΔD, O_2, PO_4-P, NO_2-N, NO_3-N, SiO_4-Si	40-1500	1500			D		Phyt-122 FObs-50 Eggs-60 ‡	Wd,W,Ta,Tw, Bar	T Wa,Col, Tra		24.04-036
124.2 C-8	HOKUSEI MARU (Cruises 24-26)	1.XI.1983-5. VIII.1984 ‡	57a,57b	144 ‡	T,S, σ_t, δ, δ_t, ΔD	25-950	973	XTb-15		D		Fobs-83 ‡	Wd,W,Ta,Bar	S Wa,Col, Tra		24.04-036
124.5 A-11	SOYO MARU (Cruise KER)	21.III.,18.-19.IV.,2.-9. VIII.1983	56,57a	67 †	(T,S, σ_t, δ, δ_t, ΔD,Vs) ✠	80-1500	1500			D ✠			(Wd,W,Ta,Cld Bar) ✠		JODC 49832402 49832403 49832406	24.09-480
124.5 B-21	SURUGA MARU etc. ‡	6.I.-18.XII. 1981	56,57a	1,656 † ‡	T,S	10-1000	1200	DTb-581	Surf-GEK-600	D			Wd,W,Ta,Cld Bar	(T,S)-23 Wa,Col, Tra		24.06-050
124.8 D-67 (Change 35)	KOFU MARU (Cruise KER)	7.-9.XI.1983	52,54, 57a	✠ *				MTb-(-17)* 217 ✠ (XTb-5 DTb-12) ✠ *	✠ *	✠ *			✠ *		JODC 49831206*	24.09-480 *
124.8 D-68 (Change 35)	KOFU MARU (Cruise KER)	28.VI.-24.VII 1983	57a	✠ *				MTb-(-17)* 70 ✠ DTb-17 ✠ *	✠ *	✠ *			✠ *	✠ *	JODC 49831204*	24.09-480 *
124.9 A-82 (Change 35)	SHUMPU MARU (Cruise KER)	7.II.-22.X. 1983	50,56, 57a	✠ *				MTb-(-380)* (XTb-139 DTb-241) ✠ *	✠ *	✠ *		✠ *	✠ *	✠ *	JODC (49831301-49831303 49831305) *	24.09-480 *
124.10 D-74 (Change 35)	CHOFU MARU (Cruise KER)	22.I.-25.X. 1983	50,52	✠ *				MTb-(-139)* 2 ✠ (XTb-6 DTb-363) ✠ *	✠ *	✠ *		✠ *	✠ *	✠ *	JODC (49831401-49831404) *	24.09-480 *
124.11 D-60 (Change 35)	SEIFU MARU (Cruise KER)	3.II.-10.III. 1983	52	✠ *				MTb-(-23)* 89 ✠ (XTb-13 DTb-10) ✠ *	✠ *	✠ *			✠ *	✠ *	JODC 49831501	24.09-480 *
124.11 D-61 (Change 35)	SEIFU MARU (Cruise KER)	5.VII.-6.VIII 1983	52	✠ *				MTb-(-23)* 248 ✠ (XTb-9 DTb-14) ✠ *	✠ *	✠ *		✠ *	✠ *	✠ *	JODC 49831503*	24.09-480 *

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				OCEANOGRAPHIC SERIAL STATIONS				BATHY-THERMO-GRAPH	CURRENTS	BOTTOM TOPO-GRAPHY	BOTTOM COMPO-SITION	BIOLOGICAL	METEOR-OLOGICAL	SEA SURFACE		
				NO. OF STAS.	PHYS. AND CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH									
124.11 D-62	SEIFU MARU	10.II.-27.X. 1984	52	166	T,S,O_2	50-1500	2000	MTb-458	Surf-GEK-403	D				S		24.25-001 002,003, 004
124.13 B-21	MEIYO, etc. ‡	3.I.-27.XII. 1983	50,52,54 56,57a					XTb-681 ‡	Surf-GEK-2,202 ‡							24.10-040
124.13 E-62	TAKUYO (Cruise KER)	2.-20.V.1983	56	24	(T,S,σ_t,δ, δ_t,ΔD,Vs,O_2, P,Si,pH) ✠	425-3900	4246	(XTb-63 DTb-24) ✠	Surf-GEK-116 ✠	D ✠			(Wd,W,Ta, Tw,Cld,Bar) ✠	S ✠ Wa ✠	JODC 49830006	24.09-480 24.10-040
124.13 E-63	TAKUYO	13.-26.I.,6.-21.III.,9.-19.IV.,5.-15.VI.1983	56,57a					XTb-132	Surf-GEK-244				Wd,Ta	T		24.10-040
124.13 GGG-12 (Change 35)	SHOYO (Cruise KER)	26.II.-20.III. 1983	56					(XTb-73 DTb-35) *	Surf-GEK-158*							24.09-480 24.10-040
124.13 GGG-14	SHOYO (Cruise KER)	18.VIII.-3.IX. 26.X.-18.XI. 1983	56,57a	59 +	(T,S,σ_t,δ, δ_t,ΔD,Vs) ✠	700-4000	4000	XTb-130 ✠	Surf-GEK-259 ✠	D ✠			(Wd,W,Ta, Tw,Cld,Bar) ✠	T ✠ Wa ✠	JODC 49830013 49830017	24.09-480 24.10-040
124.13 GGG-15	SHOYO	25.IV.,26.VI.-11.-25.VII., 13.IX.-4.X., 5.-16.XII. 1983	56,57a					XTb-191	Surf-GEK-338				Wd,Ta	T		24.10-040
124.13 KKK-16	FUJI (Cruise JARE-24)	26.XI.1982-20.IV.1983	45a,45b, 45c,45d, SO	10	T,S,σ_t,ΔD, O_2,PO_4-P, NO_2-N,NO_3-N, NH_4-N,pH ‡	1250-4500	4530	MTb-23 XTb-59	Surf-GEK-56	D		Poll-40 ‡	Wd,W,Ta,Bar, Hum	(T,S,O_2, PO_4-P, NO_2-N, NO_3-N, NH_4-N, SiO_3-Si, pH)-129,Wa		24.22-009
124.13 MMM-1	SOYA	4.-8.II.1983	52,54	30	T,S,σ_t,δ_t, ΔD,Vs	30-150	150	XTb-36	Surf-GEK-6	D			Wd,W,Ta,Tw, Cld,Bar	S Wa		24.10-040
124.16 A-26	KOYO MARU	15.-24.XI.1983	45b	8	T	600-960	966					FObs-9	Wd,W,Ta,Bar	T		24.11-036
124.16 A-27	KOYO MARU	21.XI.-24.XII 1984	45b	13	T,S,pH	1100-1500	1570			D		Zoo-13 FObs-13 Eggs-13	Wd,W,Ta,Bar	T Wa,Col, Tra		24.11-036
124.19 A-14	YOKO MARU (Cruise KER)	12.-14.XII. 1983	50	22 +	T ✠	75-900	990			D ✠			(Wd,W,Ta, Bar) ✠	(T,S,σ_t, δ,δ_t,ΔD, Vs) ✠	JODC 49832613	24.09-480
124.19 A-15	YOKO MARU (Cruise KER)	20.,22.II. 1984	50	2 +	T ✠	200	200			D ✠			(Wd,W,Ta, Bar) ✠		JODC 49842602	24.09-480
124.19 B-21	KUROSHIO MARU, etc. ‡	7.I.-4.XII. 1981	50,52	747	T,S	30-400, 1000	1000			D			Wd,W,Ta,Cld Bar	Wa,Col, Tra		24.06-050

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				NO. OF STAS.	PHYS. AND CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH								
124.20 A-21	HOKKO MARU, etc. ‡	1.II.-2.XII. 1981	52,54, 57a	481 † ‡	T,S	10-1000	1023	MTb-317 XTb-48 DTb-331		D			Wd,W,Ta,Cld Bar	S Wa,Col		24.06-050
124.21 A-23	WAKATAKA MARU, etc. ‡	7.I.-9.XII. 1981	52,57a	1,092 †	T,S	30-1400	1400	MTb-151 XTb-204 DTb-1,038	Surf-GEK-752	D			Wd,W,Ta,Bar	(T,S)-2 Wa,Col, Tra		24.06-050
124.21 B-5	SHOYO MARU (Cruise KER)	4.II.-2.III. 1984	56,57a					(XTb-19 DTb-69) ✠	Surf-GEK-74 ✠				(Wd,Ta) ✠	T ✠	JODC 49842302	24.09-480
124.21 E-4	WAKATAKA MARU (Cruise KER)	29.V.-5.VI. 1983	57a	5 †	(T,S,σ_t,δ_t, ΔD,Vs) ✠	700-1100	1172	DTb-24 ✠	Surf-GEK-37 ✠				(Wd,W,Ta, Cld) ✠	T ✠	JODC 49832306	24.09-480
124.21 F-3	SHUNYO MARU (Cruise KER)	31.X.-6.XI. 1983	57a	19	(T,S,σ_t,δ,δ_t, ΔD,Vs) ✠	50-1300	1363	XTb-3 ✠	Surf-GEK-31 ✠				(Wd,W,Ta, Cld) ✠	Wa ✠	JODC 49832312	24.09-480
124.22 A-21	TOO MARU, etc. ‡	30.I.-5.XII. 1981	52	1,195 † ‡	T,S	50-400	492	MTb-110 DTb-808		D			Wd,W,Ta,Cld, Bar	T,S Wa,Col, Tra		24.06-050
124.23 A-24	YOSHU MARU, etc. ‡	6.I.-18.XII. 1981	50,53, 56	5,101 † ‡	T,S	10-1000	1000	MTb-36	Surf-GEK-511	D			Wd,W,Ta,Cld, Bar	T-445 Wa,Col, Tra		24.06-050
124.23 E-7	SHUNYO MARU (Cruise KER)	28.VII.-16. VIII.1983	56	29 †	(T,S,σ_t,δ,δ_t, ΔD,Vs) ✠	800-1000	1000	DTb-21 ✠	Surf-GEK-48 ✠	D ✠			(Wd,W,Ta, Cld,Bar) ✠	T ✠ (Wa,Col) ✠	JODC 49832502	24.09-480
124.24 B-37	HAKUHO MARU (Cruise KH-79-4)	2.IX.-4.XI. 1979	57a,61a, 63,64	24	T,S,σ_t,ΔD,O_2 PO_4-P,NO_2-N, NH_4-N,SiO_2-Si	1100-2000	3997			D		Phyt-29 Pigm-24 Micr-20 Eggs-13	Wd,W,Ta	T Wa		24.13-055
124.24 B-38	HAKUHO MARU (Cruise KH-82-5)	22.XI.1982-14.II.1983	57a,57b, 61b	23 † ‡	T,S,σ_t,ΔD,O_2 PO_4,NO_2,NO_3, NH_4,SiO_2,pH, Alk	400,2000-4000	4000			D		Zoo-12 Pigm-24		(T,S,PO_4, NO_2,NO_3, SiO_2)-30		24.13-056
124.24 B-39	HAKUHO MARU (Cruise KH-83-4, SIBEX, Phase I, BIOMASS Programme)	13.XII.1983-28.I.1984	45d,61a, 63,SO	18	T,S,O_2,PO_4, NO_2,NO_3,Si	1500-3000	3750			D		Zoo-39 Eggs-17 Surf				24.13-058
124.27 A-16	AOMORI MARU etc. ‡	6.I.-31.XII. 1981	45b,49, 56,57a, 57b					MTb-899 XTb-39 DTb-548					Ta	T,S		24.06-050
124.28 C-6	AGS NO. 3	22.II.-3.XII. 1983	56	19	T,S,σ_t,δ,δ_t, ΔD,Vs	500-990	990						Wd,W,Ta,Cld Bar,Vis	Wa,Col, Tra		24.21-009
124.28 D-6	AGS NO. 4	15.II.-29.XI. 1983	52	33	T,S,σ_t,δ,δ_t, ΔD,Vs	400-790	798			D			Wd,W,Ta,Cld Bar,Vis	Wa,Col, Tra		24.21-009

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WDC - A, OCEANOGRAPHY DATA INFORMATION

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				OCEANOGRAPHIC SERIAL STATIONS				BATHY-THERMO-GRAPH	CURRENTS	BOTTOM TOPO-GRAPHY	BOTTOM COMPO-SITION	BIOLOGICAL	METEOR-OLOGICAL	SEA SURFACE		
				NO. OF STAS.	PHYS. AND CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH									
124.28 F-5	AGS NO. 5	14.II.-6.XII. 1983	56,57a	34	T,S,σ_t,δ,δ_t, ΔD,Vs	300-780	789			D			Wd,W,Ta,Cld, Bar,Vis	Wa,Col; Tra		24.21-009
124.31 A-1	Shore-Based Party (JARE-23, BIOMASS)	22.I.1982-28.I.1983	45c,SO	121	T,S,O_2,PO_4-P NO_2-N,NO_3-N, NH_4-N,SiO_3-Si,pH	6-600	600					Zoo-159 Pigm-121				24.22-010
224.1 A-8	Ocean Data Buoys	20.VIII.1983-31.VII.1984	50,52, 56,57a						Surf-1,456 ‡				Wd,Ta,Tw, Bar,Sol Rad	T ‡ Wa		24.07-067
26. NETHERLANDS																
126.1 A-3 (Change 2)	WILLEM BEUKELSZ	17.II.-5.III. 1959	4											(T,S)-45 ✠ *	ICES 6411	
226.2 C-11	Ship not identified	19.I.-8.XI. 1982	23a (OWS"L")	17	(T,S) ✠	500-900	925			D ✠				(T,S)-180 ✠	ICES 6453	
226.2 C-12	Ship not identified	10.III.-5.XII. 1983	23a (OWS"L")	17	(T,S) ✠	600-900	974			D ✠				(T,S)-170 ✠	ICES 6453	
28. NORWAY																
128.2 A-10 (CAT. OF DATA)	HELLAND-HANSEN	16.-29.I.,(1.-13.III.*), 6.V.-7.VI., 1.-10.IX.1963	23b	(84)* 301												
128.2 A-16 (Change 27)	HELLAND-HANSEN	25.-31.III. (12.VI.-11. VII.*),2.-5. XII.1965	23a* 6	(159)* 271												
128.2 A-17	HELLAND-HANSEN	8.-21.VI.1966	7	99	(T,S,σ_t) ✠	100-600	680			D ✠					ICES 58C1	
30. PERU																
130.1 D-12	SNP-1 (Cruise 79-05)	24.V.-13.VI. 1979	61b	68	(T,S,σ_t,δ, ΔD,Vs,O_2,PO_4 NO_2,NO_3, SiO_4) ✠	30-650	651			D ✠			Wd ✠	Tra ✠	NODC 65C086	
130.1 E-1	ALEJERO HUMBOLDT	25.V.-8.VI. 1981	61b	8	(T,S,σ_t,δ, ΔD,Vs,O_2, PO_4,NO_2,NO_3, SiO_4) ✠	125-298	298						(Wd,Ta,Tw) ✠		NODC 65C087	
32. POLAND																
132.3 F-7	WIECZNO	5.IX.-3.XI. 1973	23b	168	(T,S,σ_t,ΔD, Vs,O_2) ✠	10-500	500			D ✠			(Wd,Ta,Tw) ✠		NODC 670110	

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WDC - A, OCEANOGRAPHY DATA INFORMATION

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				OCEANOGRAPHIC SERIAL STATIONS				BATHY-THERMO-GRAPH	CURRENTS	BOTTOM TOPO-GRAPHY	BOTTOM COMPO-SITION	BIOLOGICAL	METEOR-OLOGICAL	SEA SURFACE	
				NO. OF STAS.	PHYS. AND CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH								
132.3 F-8	WIECZNO	4.-7.IV.1976	23b	14	(T,S, σ_t, ΔD, Vs, O_2) ✠	450	450						(Wd,Ta,Tw) ✠		NODC 670111
132.3 G-1	PROFESSOR SIEDLECKI	9.-28.IX.1973	23a,32b	30	(T,S, O_2, PO_4, NO_2, NO_3, SiO_4) ✠	2000-3000	3001			D ✠					ICES 6716
132.3 H-1	PROFESSOR BOGUCKI	23.-29.V.1979	23a	24	(T,S, O_2) ✠	10-600	600			D ✠			(Wd,W,Ta,Tw, Cld) ✠	Wa ✠	ICES 6717
33. PORTUGAL															
133.1 D-9	ALMEIDA CARVALHO (Cruise CECIR VIII)	20.-26.V.1982	23a	12	T,S, σ_t, δ, ΔD, Vs, O_2, PT, PO_4, NO_3, Si	1600-2300	2348	XB-12	Subs-16	D			Wd,Ta,Tw, Cld,Bar	Wa	33.01-020
34. SPAIN															
134.2 A-2	GARCIA DEL CID (Cruise CIM/ MEDALPEX)	6-11.III.1982	28Ac	18	T,S, σ_t, δ, ΔD, Vs, PE	200-1500	1800								
35. SWEDEN															
135.1 C-10 (Change 27)	ARGOS	15.I.-16.VI. (20.VIII.-9. XII.*)1979	1,1a,2, 3	(172)* 382	✠ *					✠ *			✠ *	✠ *	ICES 7714*
135.1 G-19	ARGOS	16.-26.I.,6.-21.II.,12.-27. III.1984	1,2,3	234 †	T,S, σ_t, O_2, PO_4-P, Ptotal NO_2-N, NO_3-N NH_4-N, N_{total}	22-200	440			D			Wd,W,Ta,Cld, Bar	Wa,Tra	35.03-050
135.1 G-20	ARGOS	2.-23.V.,4.-14.VI.,21. VIII.-1.IX. 1984	1,2,3	188 † ‡	T,S, σ_t, O_2, PO_4-P, Ptotal, NO_2-N, NO_3-N, NH_4-N, Ntotal, SiO_2, H_2S	10-400	410			D			Wd,W,Ta,Cld, Bar	Wa,Tra	35.03-050
135.1 G-21	ARGOS	10.IX.-25.X. 1984	1,2,3	159 †	T,S, σ_t, O_2, PO_4-P, Ptotal, NO_2N, NO_3-N, NH_4-N, Ntotal, Alk, pH, SiO_2	10-400	440			D			Wd,W,Ta,Cld, Bar	Wa,Tra	35.03-049
135.1 G-22	ARGOS	28.X.-22.XI. 1985	1,2,3	127 †	T,S, σ_t, O_2, PO_4-P, Ptotal, NO_2-N, NO_3-N, NH_4-N, Ntotal, SiO_2, H_2S, Alk, pH	11-200	440			D			Wd,W,Ta,Cld, Bar	Wa,Tra	35.03-050
235.2 L-3	TV 102, etc. ‡	27.VI.1970-31.XII.1982	1,2,3	4,039	(T,S, PO_4, NO_2) ✠	20-225	225			D ✠			(Wd,W,Ta, Cld) ✠	Wa ✠	ICES 7740

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				OCEANOGRAPHIC SERIAL STATIONS				BATHY-THERMO-GRAPH	CURRENTS	BOTTOM TOPO-GRAPHY	BOTTOM COMPO-SITION	BIOLOGICAL	METEOR-OLOGICAL	SEA SURFACE		
				NO. OF STAS.	PHYS. AND CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH									
36. SOUTH AFRICA																
136.1 D-5	BENGUELA	28.-29.IX. 1971	32a	10	(T,S,σ_t,ΔD, Vs,O_2,PO_4, Ptotal,NO_3, SiO_3) ✠	80-200	398			D ✠			(Wd,W,Ta,Tw, Cld,Bar) ✠	Wa ✠	NODC 910146	
136.1 G-1	Ship not identified	6.-30.I.,16.-22.II,6.-12.III.1959	32a	169	(T,S,σ_t,δ, ΔD,Vs) ✠	20-1900	1951			D ✠			(Wd,Ta,Tw) ✠	Wa ✠	NODC 910936	
37. U.S.S.R.																
137.1 B-22 (Change 31)	VITYAZ (Cruise 63, POLYMODE)	14.VI.-12.VII. 1978	23b					XTb-188 ✠ * ‡							(NODC (BT) 52737, 52776, 52818)*	
137.1 B-23	VITYAZ (Cruise 62, POLYMODE)	22.X.1977-4.I.1978	23b					XTb-162 ✠							NODC (BT) 52252, 52334	
137.1 H-14 (Change 23)	AKADEMIK KURCHATOV (Cruise 25, POLYMODE)	17.VII.-2.X. 1977	23b					XTb-290 ✠ * ‡							(NODC (BT) 52180 52242)*	
137.1 H-18	AKADEMIK KURCHATOV (Cruise 26, POLYMODE)	17.II.-21.V. 1978	23b					XTb-297 ✠							NODC (BT) 52559 52738	
137.1 H-19	AKADEMIK KURCHATOV (Cruise 27, POLYMODE)	17.VIII.-30. IX.1978	23b					XTb-280 ✠							NODC (BT) 52840 52917	
137.1 I-6	PETR LEBEDEV (Cruise 18, POLYMODE)	12.VIII.-11. IX.1977	23b					XTb-91 ✠							NODC (BT) 52243	
137.1 K-4	SERGEI VAVILOV (Cruise 18, POLYMODE)	13.VIII.-11. IX.1977	23b					XTb-80 ✠							NODC (BT) 52244	
137.2 E-11 (Change 28)	VIKTOR BUGAEV (Cruise 17, POLYMODE)	7.VI.-23.IX. 1977	23a,23b, 28A,28Ab 28B,30					XTb-424 ✠ * ‡							(NODC (BT) 52105 52181)*	
137.4 A-29 (Change 26)	MIKHAIL LOMONOSOV (Cruise 33, POLYMODE)	11.XI.1977-10.II.1978 *	23b,30					XTb-307 ✠ * ‡							(NODC (BT) 52262 52622 52335)*	
137.4 A-30 (Change 28)	MIKHAIL LOMONOSOV (Cruise 34, POLYMODE)	27.IV.-15. VII.1978*	23b					XTb-298 ✠ *							(NODC (BT) 52631 52669)*	

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				OCEANOGRAPHIC SERIAL STATIONS				BATHY-THERMO-GRAPH	CURRENTS	BOTTOM TOPO-GRAPHY	BOTTOM COMPO-SITION	BIOLOGICAL	METEOR-OLOGICAL	SEA SURFACE	
				NO. OF STAS.	PHYS. AND CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH								
137.4 A-33	MIKHAIL LOMONOSOV (Cruise 31, POLYMODE)	8.XI.1976-3. I.1977	23b					XTb-35 ✠							NODC (PT) 50209	
137.4 B-11 (Change 23)	AKADEMIK VERNADSKII (Cruise 14, POLYMODE)	28.IX.-19.XII. 1976	23a,23b, 30					XTb-234 ✠ * ‡							(NODC (BT) 50228 50229 52742)*	
137.4 B-12 (Change 23)	AKADEMIK VERNADSKII (Cruise 16, POLYMODE)	23.VII.-7.X. 1977*	23b					XTb-523 ✠ *							(NODC (BT) 52206 52207 52237)*	
137.4 B-16 (Change 28)	AKADEMIK VERNADSKII (Cruise 18, POLYMODE)	10.VI.-29. VII.1978*						XTb-103 ✠ * ‡							NODC (PT) 52768*	
137.4 B-17 (Change 31)	AKADEMIK VERNADSKII (Cruise 17, POLYMODE)	16.XII.1977-26.II.1978*	23b					XTb-309 ✠ *							(NODC (BT) 52625 52344 52513)*	
137.4 B-18	AKADEMIK VERNADSKII	26.V.-11.VI. 1982	23b	15	(T,S, σ_t, δ, ΔD,Vs,O_2) ✠	55-170	260			D ✠					NODC 901361	
137.5 J-1 (Change 26)	AKADEMIK KRILOV (Cruise POLYMODE)	11.VII.-4.XI. 1977	23b					XTb-568 ✠ * ‡							NODC (PT) 52261 *	
137.9 C-5	PROFESSOR VODYANITSKII (Cruise 12, CIM/ MEDALPEX)	2.III.-27.IV. 1982	28A,28Ae, 28B,28Bf, 28Bg									Zoo-126 Sest-117 Pigm-134 PrPr-135				
137.10 H-4	LIADOSTROV (SRT 4191)	17.IV.-28.VII 1982	15A,23b	266	(T,S, σ_t, δ, ΔD,Vs) ✠	50-650, 1800-2000	2000			D ✠					NODC 901359	
137.10 H-5	LIADOSTROV (SRT 4191)	14.X.1982-20. II.1983	15,15A, 23b	139	(T,S, σ_t, δ, ΔD,Vs,O_2,PO_4 SiO_4) ✠	50-1200	1448			D ✠					NODC 901360	
137.10 II-4	ARGUS (Cruise 1)	18.X.-9.XI. 1977	23b	141	(T,S, σ_t, δ, ΔD,Vs) ✠	15-500	573			D ✠					NODC 901362	
137.10 JJ-6	BELOGORSK (Cruise 1)	12.VII.-4. VIII.1978	23b	151	(T,S, σ_t, δ, ΔD,Vs,O_2) ✠	15-500	500			D ✠					NODC 901363	
137.11 M-5	PROTSION	11.X.-7.XI. 1982	23b	32	(T,S, σ_t, δ, ΔD,Vs,O_2,PO_4 SiO_4) ✠	250-1000, 1900-2000	2019			D ✠					NODC 901357	
137.11 N-5	POISK	13.,27.XI.-9. XII.1983	15A,23b	42	(T,S, σ_t, δ,ΔD, Vs) ✠	200-1000	1000			D ✠					NODC 901358	
137.13 I-5 (Change 35)	OGON	CATALOGUE NUMBER DELETED FROM THE FILES														

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				OCEANOGRAPHIC SERIAL STATIONS				BATHY-THERMO-GRAPH	CURRENTS	BOTTOM TOPO-GRAPHY	BOTTOM COMPO-SITION	BIOLOGICAL	METEOR-OLOGICAL	SEA SURFACE		
				NO. OF STAS.	PHYS. AND CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH									
137.15 G-1 (Change 26)	MOLDAVIA (Cruise POLYMODE)	22.II.-12.VI 1978*	23b					XTb-511 ✠ * ‡							NODC (ET) 52670*	
137.21 C-3	GERAKL	6.II.-11.III. 1982	23b	16	(T,S,σ_t,δ, ΔD,Vs) ✠	200-1000	1018			D ✠					NODC 901353	
137.21 C-4	GERAKL	24.-31.V.1983	23b	42	(T,S,σ_t,δ, ΔD,Vs) ✠	120-2000	2000			D ✠					NODC 9C1354	
137.21 F-1	KRASIY KASP II	1.III.-19.IV. 1983	23b	117	(T,S,σ_t,δ, ΔD,Vs) ✠	50-1200, 2000	2000			D ✠					NODC 901355	
137.21 F-2	KRASIY KASP II	1.XI.1983-10.I.1984	23b	67	(T,S,σ_t,δ, ΔD,Vs) ✠	40-1100	1115			D ✠					NODC 901356	
38. UNITED KINGDOM																
138.5 B-18	DISCOVERY (Cruise 132)	27.I.-20.II. 1983	23a	29 †	T,S,σ_t,δ,ΔD, Vs,PT,O_2	600-2000	5000									38.14-287
39. UNITED STATES																
139.1 C-20 (Change 9)	ATLANTIS II (Cruise 56, CICAR)	5.II.-30.IV. 1970	23b,27					XTb-334 ✠ *							NODC (BT) 42849*	
139.1 C-32 (Change 17)	ATLANTIS II (Cruise 83, GATE, GEOSECS, CICAR*)	10.VI.-30.VII 1974*	23a,23b* 32a,32b					XTb-113 ✠ *							NODC (BT) 45508*	
139.4 B-16	T. G. THOMPSON (Cruise ADS 3, GEOSECS, NORPAX, IDOE)	18.V.-19.VI. 1977	57b	78 †	T,S,σ_t,δ,ΔD, Vs,PT	1000-1020	1020							T,S		
139.5 B-4 (Change 17)	TRIDENT (Cruise 131, CICAR)	4.-22.II.1973	27					XTb-11 ✠ *							NODC (ET) 45784*	
139.5 B-5 (Change 17)	TRIDENT (Cruise 134, CICAR)	8.-18.IV.1973	23b					XTb-12 ✠ *							NODC (BT) 45782*	
139.5 B-8 (Change 22)	TRIDENT (Cruise 132, CICAR)	25.II.-4.III. 1973	23b					XTb-20 ✠ *							NODC (BT) 45783*	
139.5 B-16	TRIDENT (Cruise 80, CICAR)	26.III.-6.IV. 1970	23b					XTb-14 ✠							NODC (BT) 41139	
139.5 B-17	TRIDENT (Cruises 92, 94, CICAR)	4.-18.,28.I. 1971	23b,27					XTb-36 ✠							NODC (ET) 50042, 50043	

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WDC - A, OCEANOGRAPHY DATA INFORMATION

COUNTRY CATALOGUE NUMBER (*)	SHIP/FIXED STATION (CRUISE)	PERIOD	REGION (IHB)	TYPES OF OBSERVATIONS										DATA CENTER REFERENCE NUMBER	WDC-A ACC. PUBS. NUMBER
				OCEANOGRAPHIC SERIAL STATIONS				BATHY-THERMO-GRAPH	CURRENTS	BOTTOM TOPO-GRAPHY	BOTTOM COMPO-SITION	BIOLOGICAL	METEOR-OLOGICAL	SEA SURFACE	
				NO. OF STAS.	PHYS. AND CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH								
139.5 B-18	TRIDENT (Cruises 168, 169, CICAR)	25.V.-9.VI., 26.VI.-10.VII. 1975	23b					XTb-290 ✠							NODC (BT) 48870, 48871	
139.7 B-10 (Change 15)	ALAMINOS (Cruise 70-A-6, CICAR)	1.-26.IV.1970 *	26,27					XTb-164 ✠ *							NODC (ET) 44920 *	
139.7 B-13 (Change 15)	ALAMINOS (Cruises 69-A-8, A-10, CICAR)	(4.-21.VI.)*, 12.-29.VII 1969	26,27					XTb-235 ✠ *							NODC (BT) 41389, 44919 *	
139.7 B-14 (Change 16)	ALAMINOS (Cruises 70-A-2, A-3, A-4, A-5, CICAR)	27.I.-20.III. 1970 *	23b*, 26,27					XTb-122 ✠ *							NODC (BT) 41465-41468 *	
139.7 B-16 (Change 16)	ALAMINOS (Cruise 70-A-8, CICAR)	18.V.-3.VI. 1970	26,27					XTb-24 ✠ *							NODC (BT) 44921 *	
139.7 B-17 (Change 16)	ALAMINOS (Cruise 70-A-14, CICAR)	22.X.-2.XI. 1970	26					XTb-89 ✠ *							NODC (ET) 44283 *	
139.7 B-18 (Change 16)	ALAMINOS (Cruise 72-A-7, CICAR)	26.III.-21. IV.1972	26,27					XTb-284 ✠ *							NODC (ET) 44186 *	
139.7 B-21 (Change 16)	ALAMINOS (Cruise 69-A-7, CICAR)	(30.IV.-23. V.)*, 9.-21. IX.1969	26,27					XTb-186 ✠ *							NODC (BT) 41388 *	
139.7 B-24 (Change 22)	ALAMINOS (Cruise 72-A-8, CICAR*)	23.IV.-1.V. 1972 *	27					XTb-96 ✠ *							NODC (ET) 44924 *	
139.7 B-25	ALAMINOS (Cruises 70-A-10, A-11, CICAR)	4.-31.VII., 9.VIII.-4.IX. 1970	26,27					XTb-170 ✠							NODC (BT) 44922, 44923	
139.7 B-26	ALAMINOS (Cruise 71-A-4, CICAR)	18.-20.II., 14.-27.IV., 13.-15.V.1971	26,27					XTb-54 ✠							NODC (BT) 50101,50109, 50110	
139.7 B-27	ALAMINOS (Cruises 73-A-8, A-15, CICAR)	7.V.-5.VI., 12.-13.X.1973	26,27					XTb-325 ✠							NODC (BT) 44803, 44893	
139.7 E-1 (Change 16)	DROGUE (Cruises 1A-3, 6, 7*, 8, 9)	8.IV.-12.XII. 1963(6.-7.VII 1963)*	26	(17)* 199										(8)* 30	NODC 312463 *	
139.8 D-85	ALEXANDER AGASSIZ, DAVID STARR JORDAN ALASKA (Cruises CalCOFI 7207, 7210)	6.-29.VII.,23 IX.-17.XI. 1972	57b	427 † ‡	T,S, σ_t, δ_t, ΔD, O_2, PO_4, NO_2, NO_3, SiO_3	75-1100	4129			D			Wd,W	(T,S, δ_t)-305 ‡ Wa		39.01-288

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WDC - A, OCEANOGRAPHY DATA INFORMATION

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				OCEANOGRAPHIC SERIAL STATIONS				BATHY-THERMO-GRAPH	CURRENTS	BOTTOM TOPO-GRAPHY	BOTTOM COMPO-SITION	BIOLOGICAL	METEOR-OLOGICAL	SEA SURFACE		
				NO. OF STAS.	PHYS. AND CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH									
139.8 S-5	ALPHA HELIX	26.VII-9.VIII. 21.-25.X.,17. -24.XI.1981	55,58	301 †	(T,S,σ_t,ΔD, Vs) ✠	30-1500	1500			D ✠					NODC 319155, 319292, 319285	
139.8 S-6	ALPHA HELIX	30.IX.-14.X. 1982	55	81 †	(T,S,σ_t,ΔD, V_S) ✠	20-600	600			D ✠					NODC 319290	
139.8 V-4	NEW HORIZON (Cruise CalCOFI 8407)	12.-25.VII. 1984	57b	90	T,S,σ_t,δ_t, ΔD,PT,O_2,PO_4 NO_2,NO_3,SiO_3	50-600	617			D		Zoo-117 Pigm-114 C14-19	Wd,W,Ta,Tw, Cld,Bar	(T,S,σ_t, δ_t,ΔD,PT, O_2,PO_4,NO_2 NO_3,SiO_3)-5 ‡ Wa		39.01-281
139.8 V-5	NEW HORIZON (Cruise CalCOFI 8410)	18.X.-6.XI. 1984	57b	87	T,S,σ_t,δ_t, ΔD,PT,O_2,PO_4 NO_2,NO_3,SiO_3	50-610	612			D		Zoo-146 Pigm-92 PrPr-19	Wd,W,Ta,Tw, Cld,Bar	(T,S,σ_t, δ_t,ΔD,PT, O_2,PO_4,NO_2 NO_3,SiO_3)-5 ‡ Wa		39.01-284
139.14 F-11	COLUMBUS ISELIN (Cruises CI-04, 06, 08)	12.-23.IV., 26.-30.VII.,9. -14.XI.1978	23b	160 †	(T,S,σ_t,δ, ΔD,Vs,O_2,PO_4 NO_2,NO_3, SiO_4) ✠	10-435	435			D ✠			(Wd,W,Ta, Bar) ✠	Wa ✠	NODC 328552 328553, 328554	
139.14 G-6	GILLIS (Cruise GS7203, CICAR)	4.-16.VI.1972	26					XTb-105 ✠							NODC (BT) 44110	
139.15 E-9	WECOMA (Cruise ADS-2, GEOSECS, NORPAX, IDOE)	3.IX.-6.X. 1976	57b	79 †	T,S,σ_t,δ,ΔD, V_S,PT	990-1020	1090							T,S		
139.16 J-12 (Change 10)	ROCKAWAY (Cruise RCC, CICAR)	27.VII.-24. VIII.1971*	23b, (27)*					XTb-40 ✠ *							NODC (BT) 41744 *	
139.16 J-19	ROCKAWAY (Cruise BOMEX, Period 01)	1.-16.V.1969	23b	95 †	(T,S,σ_t,ΔD, V_S) ✠	550-950	950								NODC 319004	
139.16 P-1 (Change 10)	HAMILTON (Cruise HT-1, CICAR *)	17.II.-9.V. 1971 *	23b					XTb-110 ✠ * ‡							NODC (BT) 42942*	
139.19 A-4	PEIRCE (Cruise RP-9-PE-70 Legs 1 & 2, CICAR)	9.-15.,22.- -29.X.1970	26,27					XTb-140 ✠							NODC (BT) 41429, 41430	
139.20 A-27	ACONA	11.-17.XI. 1977	58	31 †	(T,S,σ_t,ΔD, Vs) ✠	50-400	425			D ✠					NODC 319172	

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				OCEANOGRAPHIC SERIAL STATIONS				BATHY-THERMO-GRAPH	CURRENTS	BOTTOM TOPO-GRAPHY	BOTTOM COMPO-SITION	BIOLOGICAL	METEOR-OLOGICAL	SEA SURFACE	
				NO. OF STAS.	PHYS. AND CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH								
139.20 A-28	ACONA	22.IV.-5.V., 17.-30.IX. 1978	58	233 †	(T,S,σ_t, ΔD, Vs) ✠	60-1500	1500			D ✠					NODC 319165, 319186
139.20 A-29	ACONA	11.-17.V.,15. -24.VIII.1979	58	180 †	(T,S,σ_t, ΔD) ✠	14-1500	1500			D ✠					NODC 319197, 319213
139.20 G-1	REDOUBT	6.-10.X.,15.-19.XI.,15.-20.XII.1979	59	78 †	(T,S,σ_t, ΔD, Vs) ✠	100-400	400			D ✠				(T,S,σ_t, ΔD,Vs)-1✠	NODC 329256, 329257, 329258
139.20 G-2	REDOUBT	24.II.-16.XII. 1980	59	263 †	(T,S,σ_t, ΔD, Vs) ✠	20-325	400			D✠				(T,S,σ_t, Vs)-1 ✠	NODC 329259-329265, 329279, 329277
139.20 G-3	REDOUBT	29.I.-6.II., 13.-15.III., 9.-14.IV.1981	59	39 †	(T,S,σ_t, ΔD, Vs) ✠	100-350	350			D ✠					NODC 329278, 329280, 329281
139.20 G-4	REDOUBT	5.-13.IV.1982	59	28 †	(T,S,σ_t, ΔD, Vs) ✠	16-350	350			D ✠					NODC 329303
139.21 A-9 (Change 17)	TURSIOPS (Cruise T-7507, CICAR)	19.VI.-17.VII. 1975 *	26					XTb-14 ✠ *							NODC (BT) 49491 *
139.21 A-12	TURSIOPS (Cruise 20, CICAR)	9.-29.IX.1975	26					XTb-14 ✠							NODC (BT) 49926
139.23 A-1 (Change 13)	RESEARCHER (Cruise RP-9-RE-71 CICAR)	14.VII.-1.IX. 1971 *	26,27					XTb-384 ✠ *							NODC (BT) 41898*
139.23 A-7	RESEARCHER (Cruise RP-11-RE-76)	8.X.-14.XI. 1976	26	100 †	(T,S,σ_t, ΔD, Vs) ✠	30-2500	2500								NODC 319230
139.23 C-2 (Change 15)	RAINIER, RESEARCHER (Cruise RP-12-RE-71, CICAR)	15.IX.-18.XI. 1971	23b,27					XTb-6 ✠ * ‡							NODC (BT) 41897 *
139.23 C-4	RAINIER (Cruise BOMEX, Periods 01, 03)	1.-3.V.,21. VI.-2.VII. 1969	23b	42 †	(T,S,σ_t, ΔD, Vs) ✠	16-950	950								NODC 319003, 319013
139.23 C-5	RAINIER (Cruise BOMEX, Period 04)	11.-28.VII. 1969	23b	64 †	(T,S,σ_t, ΔD, Vs) ✠	950	950								NODC 319018
139.23 D-1 (Change 13)	ALBATROSS IV (Cruise 6, CICAR)	13.VII.-20. VIII.1972	23b					XTb-223 ✠ *							NODC (BT) 44308 *
139.23 D-2 (Change 13)	ALBATROSS IV (Cruise 7302, CICAR *)	18.I.-2.III. 1973 *	23b					XTb-193 ✠ *							NODC (BT) 44256 *

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				OCEANOGRAPHIC SERIAL STATIONS				BATHY-THERMO-GRAPH	CURRENTS	BOTTOM TOPO-GRAPHY	BOTTOM COMPO-SITION	BIOLOGICAL	METEOR-OLOGICAL	SEA SURFACE		
				NO. OF STAS.	PHYS. AND CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH									
139.23 F-3	OREGON II (Cruise 22, CICAR)	20.X.-1.XII. 1970	26,27					XTb-41 ✠							NODC (BT) 41141,41282, 48905,48906	
139.23 F-4	ORECON II (Cruise 73-43, CICAR)	9.II.-13.III. 1973	23b,27					XTb-166 ✠							NODC (BT) 44722	
139.23 F-5	ORECON II (Cruise 73-45-I, II, CICAR)	2.-21.,30.V.-9.VI.1973	23b,26					XTb-163 ✠							NODC (BT) 44709,44710	
139.23 G-1 (Change 13)	DOLPHIN (Cruise 2, CICAR*)	13.II.-23.III 1973	23b					XTb-30 ✠ *							NODC (BT) 44361 *	
139.23 C-4 (Change 16)	DOLPHIN (Cruise 5, CICAR*)	23.X.-16.XI. 1973	23b					XTb-83 ✠ *							NODC (BT) 44753 *	
139.23 H-10	MURRE II (Cruise MU-81-9)	28.V.-3.VI. 1981	59	8	(T,S,σ_t, δ,ΔD, Vs,O_2, PO_4, NO_2,NO_3,SiO_4) ✠	50-100	100			D ✠			(Wd,W,Cld, Ta,Tw,Bar) ✠	(Wa,Col, Tra) ✠	NODC 313038	
139.23 J-7	SURVEYOR	5.-12.VI.1975	58	94 †	(T,S,σ_t,ΔD, Vs) ✠	40-1500	1501			D ✠				(T,S,σ_t, Vs)-2 ✠	NODC 319032	
139.23 K-1 (Change 15)	DISCOVERER (Cruise 4, OPR425, CICAR*)	19.-26.VIII., (13.-16.IX.)* 1970;5.-19.V. 1971	23a,23b					XTb-15 ✠ * ‡							NODC (BT) 42118 *	
139.23 K-3 (Change 17, 22)	DISCOVERER (Cruise RP-9, RP-11, CICAR)	18.VII.-20. VIII.,(9.IX.-3.X.)*1971	23b,27					XTb-182 ✠ * ‡							NODC (BT) 42508,44012	
139.23 K-7 (Change 34)	DISCOVERER	15.-17.II.,22. V.-9.VI.,18. -21.VI.1977	57b,59	(41)* 169											NODC 319116	
139.23 K-9	DISCOVERER	13.V.-2.VI. 1981	55	186 †	(T,S,σ_t,ΔD, Vs) ✠	10-100	347			D ✠					NODC 319068	
139.23 K-10	DISCOVERER (Cruise BOMEX, Periods 02, 03, 04)	23.V.-10.VI., 21.VI-2.VII., 11.-24.VII. 1969	23b	267 †	(T,S,σ_t,ΔD, Vs) ✠	600-950	950							(T,S,σ_t, ΔD,Vs)-1 ✠	NODC 319005, 319010, 319015	
139.23 K-11	DISCOVERER	2.-10.III., 15.III.-1.V. 1977	55,58	198 †	(T,S,σ_t,ΔD, V_S) ✠	50-1300	1300							(T,S,σ_t, Vs)-1 ✠	NODC 319095, 319097	
139.23 K-12	DISCOVERER (Cruise RP-8-DI-79)	18.-24.VIII. 1979	55	94 †	(T,S,σ_t,ΔD, Vs) ✠	30-1300	1300			D ✠					NODC 319229	
139.23 K-13	DISCOVERER	10.-13.XI. 1980	55	29 †	(T,S,σ_t,ΔD, Vs) ✠	40-180	180								NODC 319273	

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				OCEANOGRAPHIC SERIAL STATIONS				BATHY-THERMO-GRAPH	CURRENTS	BOTTOM TOPO-GRAPHY	BOTTOM COMPO-SITION	BIOLOGICAL	METEOR-OLOGICAL	SEA SURFACE		
				NO. OF STAS.	PHYS. AND CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH									
139.23 L-11	OCEANOGRAPHER (Cruise BOMEX, Period 02)	23.V.-10.VI. 1969	23b	170 †	(T,S,σ_t,ΔD, Vs) ✠	20-60, 950	950								NODC 319007	
139.23 L-12	OCEANOGRAPHER (Cruise BOMEX, Period 04)	11.-29.VII. 1969	23b	122 †	(T,S,σ_t,ΔD, Vs) ✠	20-180, 950	950								NODC 319017	
139.23 M-6	VIRGINIA KEY	18.-19.XII. 1978	26	11 †	(T,S,σ_t,ΔD, Vs) ✠	126-300, 1000	1000			D ✠					NODC 319192	
139.23 M-7	VIRGINIA KEY (Cruise VK-73-13, CICAR)	9.-16.VI.1973	26					XTb-59 ✠							NODC (BT) 45205	
139.23 Q-5	MT. MITCHELL (Cruise BOMEX, Period 02)	23.V.-10.VII. 1969	23b	63 †	(T,S,σ_t,ΔD, Vs) ✠	950	950								NODC 319006	
139.23 W-4	MC ARTHUR (Cruise CalCOFI 8502)	19.II.-5.III. 1985	57b	65	T,S,σ_t,δ,ΔD, PT,O_2,PO_4, NO_2,NO_3,SiO_3	50-620	658			D		Zoo-51 Pigm-66 PrPr-10	Wd,W,Ta,Tw, Cld,Bar	(T,S,σ_t,δ, ΔD,PT,O_2, PO_4,NO_2, NO_3,SiO_3)-2 ‡ Wa,Tra		39.01-287
139.23 X-5	MILLER FREEMAN	29.III.-2.IV. 1977	58	32 †	(T,S,σ_t,ΔD, Vs) ✠	80-1000	1000			D ✠					NODC 319104	
139.23 X-6	MILLER FREEMAN	5.II.-8.III. 1979	58	99 †	(T,S,σ_t,ΔD, Vs) ✠	35-500	500			D ✠					NODC 319225	
139.23 Y-6	DAVID STARR JORDAN (Cruise CalCOFI 8407)	13.-28.VII. 1984	57b	79	T,S,σ_t,δ_t, ΔD,PT,O_2,PO_4, NO_2,NO_3,SiO_3	30-550	605			D		Zoo-107 Pigm-101 C14-18	Wd,W,Ta,Tw, Cld,Bar	(T,S,σ_t, δ_t,ΔD,PT, O_2,PO_4,NO_2 NO_3,SiO_3)-4 Wa		39.01-281
139.23 Y-7	DAVID STARR JORDAN (Cruise CalCOFI 8410)	2.-23.X.1984	57b	71	T,S,σ_t,δ_t, ΔD,PT,O_2,PO_4, NO_2,NO_3,SiO_3	40-600	604			D		Zoo-98 Pigm-77 PrPr-18	Wd,W,Ta,Tw, Cld,Bar	(T,S,σ_t, δ_t,ΔD,PT, O_2,PO_4,NO_2 NO_3,SiO_3)-6 Wa		39.01-284
139.23 Y-8	DAVID STARR JORDAN NEW HORIZON (Cruises CalCOFI 8012, 8101, 8102, 8104)	26.XI.1980-27.IV.1981	57b	250 † ‡	T,S,σ_t,δ,ΔD, PT	30-590	598			D			Wd,W,Ta,Tw Cld,Bar	(T,S, σ_t,δ) -753 ‡ Wa		39.01-285
139.23 Y-9	DAVID STARR JORDAN NEW HORIZON (Cruises CalCOFI 8105, 8107)	19.V.-12.,26. VI.-7.VIII. 1981	57b	375 †	T,S,σ_t,δ,ΔD, PT,O_2,PO_4, NO_2,NO_3,SiO_3	40-550	990			D		Zoo-234 Pigm-145 PrPr-59	Wd,W,Ta,Tw, Cld,Bar	(T,S,σ_t, δ_t,O_2)-210 ‡ Wa,Tra		39.01-286

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COUNTRY CATALOGUE NUMBER (*)	SHIP / FIXED STATION (CRUISE)	PERIOD	REGION (IHB)	TYPES OF OBSERVATIONS											DATA CENTER REFERENCE NUMBER	WDC-A ACC. PUBS. NUMBER
				OCEANOGRAPHIC SERIAL STATIONS				BATHY-THERMO-GRAPH	CURRENTS	BOTTOM TOPO-GRAPHY	BOTTOM COMPO-SITION	BIOLOGICAL	METEOR-OLOGICAL	SEA SURFACE		
				NO. OF STAS.	PHYS. AND CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH									
139.23 Y-10	DAVID STARR JORDAN (Cruise CalCOFI 8505)	30.IV.-18.V. 1985	57b	71	T,S,σ_t,δ,ΔD, PT,O_2,PO_4, NO_2,NO_3,SiO_3	17-600	605			D		Zoo-50 Pigm-140 PrPr-17	Wd,W,Ta,Tw, Cld,Bar	(T,S,σ_t,δ, ΔD,PT,O_2, PO_4,NO_2, NO_3,SiO_3)-69 ‡ Wa,Tra		39.01-287
139.24 A-14	EASTWARD (Cruise E-22B-71, CICAR)	1.-11.IX.1971	23b,26, 27					XTb-44 ✠							NODC (BT) 41979	
139.26 A-6	KANA KEOKI (Cruise ADS 1, GEOSECS, NORPAX, IODE)	22.VI.-12.VII. 1976	57b	54 †	T,S,σ_t,δ,ΔD, PT,Vs	970-1110	1180							T,S		
43. KOREA																
143.1 A-4	Ship not identified	23.IV.-22.IX. 1984	52	99	T,S,O_2,pH	8-40	43	MTb-110	Surf-GEK-165	D			Wd,W,Ta,Tw, Cld,Bar	T Wa,Col,Tra		43.01-012
143.2 G-22	HAN RA SAN	8.II.-31.XII. 1972;3.-4.I. 1973	50,51, 52	376	T,S,O_2,PO_4-P, NO_2-N,SiO_2-Si	30-100	100			D			Wd,W,Ta,Cld Bar	(T,S)-5 Wa,Col,Tra		43.02-062
143.2 H-17	TAE BAEK SAN	9.II.-17.X. 1972	50,51 52	206	T,S,O_2,PO4-P, NO_2-N,SiO_2-Si	75-200	200			D			Wd,W,Ta,Cld Bar	Wa,Col,Tra		43.02-062
143.2 J-6	CHUK YANG HO	10.IV.-15.XII. 1972	52	134	T,S,O_2,PO_4-P, NO_2-N	30-300	300			D			Wd,W,Ta,Cld Bar	Wa,Col		43.02-062
143.2 K-11	CHI RI SAN	12.II.-11.XII. 1972	52	432	T,S,O_2,PO_4-P NO_2-N,SiO_2-Si,pH	50-500	500			D			Wd,W,Ta,Cld Bar	Wa,Col,Tra		43.02-062
143.2 R-1	PUSAN 852 (Cruises 8410, 8412, IGOSS)	9.-19.X.,10.-20.XII.1984	50,51, 52					MTb-112 ✠		D ✠			(Wd,Ta,Bar) ✠	Wa ✠	KODC 840110, 840112	
143.2 R-2	PUSAN 852 (Cruise 8502,IGOSS)	2.-6.II.1985	50,51, 52					MTb-46 ✠		D ✠			(Wd,Ta,Bar) ✠	Wa ✠	KODC 850102	
143.2 R-3	PUSAN 852 (Cruise 8506, IGOSS)	4.-9.VI.1985	50,51, 52					MTb-46 ✠		D ✠			(Wd,Ta,Bar) ✠	Wa ✠	KODC 850106	
143.2 R-4	PUSAN 852 (Cruise 8504, IGOSS)	9.-17.IV.1985	50,51, 52					MTb-46 ✠		D ✠			(Wd,Ta,Bar) ✠	Wa ✠	KODC 850104	
143.2 R-5	PUSAN 852 (Cruises 8508, 8510, IGOSS)	13.-23.VIII., 8.-20.X.1985	50,51, 52					MTb-92 ✠		D ✠			(Wd,Ta,Bar) ✠	Wa ✠	KODC 850108, 850110	

* DATA FOR THIS CRUISE REPRESENT AN ADDITION TO DATA PREVIOUSLY RECEIVED BY WDC-A, OCEANOGRAPHY. (SEE CATALOGUE NUMBER PORTION OF EXPLANATION OF WDC-A, OCEANOGRAPHY DATA INFORMATION SHEET).
† DENOTES DATA OBTAINED BY ELECTRONIC, IN-SITU, SALINITY / TEMPERATURE / DEPTH (STD) SENSORS.
‡ FOR ADDITIONAL, DESCRIPTIVE REMARKS PERTAINING TO THESE DATA, PLEASE SEE THE REMARKS SECTION.
✠ INDICATES MACHINE PROCESSED DATA THAT CORRESPOND TO THE DATA CENTER REFERENCE NUMBER.

WDC - A, OCEANOGRAPHY DATA INFORMATION

COUNTRY CATALOGUE NUMBER (*)	SHIP/FIXED STATION (CRUISE)	PERIOD	REGION (IHB)	TYPES OF OBSERVATIONS											DATA CENTER REFERENCE NUMBER	WDC-A ACC. PUBS. NUMBER
				OCEANOGRAPHIC SERIAL STATIONS				BATHY-THERMO-GRAPH	CURRENTS	BOTTOM TOPO-GRAPHY	BOTTOM COMPO-SITION	BIOLOGICAL	METEOR-OLOGICAL	SEA SURFACE		
				NO. OF STAS.	PHYS. AND CHEM. DATA	SAMPLE DEPTHS	MAX. DEPTH									
243.1 A-9	Ship not identified	8.II.-25.XII. 1972	50,51, 52									Phyt-548				43.02-062
243.1 C-13	TAE BAEK SAN, CHI RI SAN, HAN RA SAN (Cruise Korea-Japan Cooperative)	11.II.-22.XII. 1972	50,51, 52	70	T,S,	30-100	100			D			Wd,W,Ta,Cld, Bar	Wa,Col,Tra		43.02-062
48. MALAGASY REPUBLIC																
248.2 A-1 (Change 24)	COMMANDANT ROBERT GIRAUD	9.III.-7.V. 1958	45A											S-164 *	ICES 3500 *	
50. SENEGAL																
150.1 D-1	GERARD TRECA (Cruise GERARD TRECA)	2.-21.VI.1962	23a	42	(T,S) ✠	25-500	500			D ✠					BNDO 62001611	

* DATA FOR THIS CRUISE REPRESENT AN ADDITION TO DATA PREVIOUSLY RECEIVED BY WDC-A, OCEANOGRAPHY. (SEE CATALOGUE NUMBER PORTION OF EXPLANATION OF WDC-A, OCEANOGRAPHY DATA INFORMATION SHEET).
† DENOTES DATA OBTAINED BY ELECTRONIC, IN-SITU, SALINITY / TEMPERATURE / DEPTH (STD) SENSORS.
‡ FOR ADDITIONAL, DESCRIPTIVE REMARKS PERTAINING TO THESE DATA, PLEASE SEE THE REMARKS SECTION.
✠ INDICATES MACHINE PROCESSED DATA THAT CORRESPOND TO THE DATA CENTER REFERENCE NUMBER.

PART III
REMARKS

REMARKS

102.6 A-16

REGION (IHB): 39, 40, 42, 43, 44, 45a, 45b, 46a, 48a, 48g, 48i, 48j, 481, 48n, 49, 50, 52, 56, 57b, 61a, 62, 63, 64

SHIP	NODC (BT) NO.	PERIOD	NO. OF XBT's
ADELAIDE	60346	24.XI.-15.XII.1981	70
HOBART	60345	13.VIII.-31.X.1981	74
PERTH	60343	15.I.-31.V., 7.IX.-28.X.1981	486
SWAN	60344	18.-30.VIII.,23.-29.IX. 13.-21.XI.1981	59

102.6 A-17

REGION (IHB): 37, 38, 39, 40, 42, 43, 44, 45a, 45b, 46a, 48a, 48b, 48g, 48i, 49, 56, 57b, 61a, 62, 63, 64, 65, 66

SHIP	NODC (BT) NO.	PERIOD	NO. OF XBT's
ADELAIDE	60353	1.IX.-27.X.1982	200
ADELAIDE	60354	30.X.-3.XII.1982	109
BRISBANE	60351	19.III.-29.VII.1982	131
CANBERRA	60349	10.VI., 7.-9.VII., 18.VIII. 1981, 19.I.-5.II., 9.-28. III.1982	143
HOBART	60347	23.II.-28.V.1982	180
PERTH	60348	8.III.-15.IV.1982	86
PERTH	60350	15.IV.-4.VI.1982	114
PERTH	60352	5.VI.-28.VII.1982	104

102.6 A-18

REGION (IHB): 39, 42, 45a, 45b, 47 481, 48n, 49, 50, 52, 56, 62, 63

SHIP	NODC (BT) NO.	PERIOD	NO. OF XBT's
CANBERRA	60355	2.III.-5.V.1983	130
COOK	60357	28.IV.-14.VI.1983	226
TORRENS	60356	5.III.-1.VI.1983	132

102.6 A-9

REGION (IHB): 45b, 47, 48a, 48b, 48h, 48i, 48j, 481, 48m, 48n, 49, 50, 56, 57b, 61a, 62, 63, 64, 65, 66

SHIP	NODC NO.	PERIOD	NO. OF XBT's
PARRAMATTA	60359	10.V.-19.VII.1984	158
STUART	60358	30.III.-16.V.1984	42
STUART	60360	22.V.-27.VIII.1984	60
STUART	60362	10.IX.-11.XI.1984	90
YARRA	60361	18.VII.-18.XI.1984	192

106.10 E-1

SHIP: GADUS ATLANTICA, A.T. CAMERON. ATKINSON, ARTICA, SHAMOOK, and Various Chartered Vessels

NODC NO: 64844-64863, 65164-65185, 65609-65613, 65827-65830

106.10 E-2

SHIP: GADUS ATLANTICA, A.T. CAMERON, MARINUS, SHAMOOK, and Various Chartered Vessels

NODC NO: 64864-64888, 65186-65194, 65196-65200, 65202, 65204, 65205, 65207-65211, 65614, 65615

106.11 V-3

NODC NO.	CRUISE	PERIOD	NO. OF STAS.
181550	84-02	2.-13.III.1984	80
181551	84-03	17.-27.III.1984	87
181552	84-05	10.-22.VII.1984	66
181553	84-06	25.VII.-2.VIII.1984	78

106.11 W-2

SHIP: A.T. CAMERON, CANSO CONDOR, E.E. PRINCE, LADY HAMMOND

NODC BT NO: 55735-55744, 64799-64805, 65138, 65139, 65593, 65594, 65817, 65826

106.11 W-3

SHIP: A.T. CAMERON, BRANDAL, E.E. PRINCE, LADY HAMMOND, Ship not identified

NODC NO: 64806-64812, 64814-64821, 65140-65144, 65146-65154, 65513, 65514, 65595-65599, 65601-65604

106.11 W-4

SHIP: LADY HAMMOND, ALFRED NEEDLER, E.E. PRINCE

NODC NO: 64822-64843, 65155-65158, 65605, 65606

106.11 W-5

SHIP: E.E. PRINCE, ALFRED NEEDLER, Various Chartered Vessels

NODC NO: 65159-65163, 65607, 65608, 65515-65518

106.27 A-1

SHIP: ANNAPOLIS, FRASER, MARGAREE, NIPIGON, OTTAWA, SAGUENAY, SKEENA, ST. LAURENT, TERRANOVA

106.27 A-2

SHIP: ALGONQUIN, ANNAPOLIS, ASSINIBOINE, ATHABASKAN, HURON, IROQUOIS, KOOTENAY, MARGAREE, NIPIGON, OTTAWA, PORTE ST. JEAN, QUAPPELLE, SAGUENAY, SASKATCHEWAN, SKEENA, ST. LAURENT, YUKON, Ship not identified

106.27 A-3 SHIP: ALGONQUIN, ANNAPOLIS, ASSINIBOINE, ATHABASKAN, BAFFIN, FRASER, HURON, IROQUOIS, MARGAREE, NIPIGON, OTTAWA, SAGUENAY, SKEENA

106.27 A-4 SHIP: ALGONQUIN, ANNAPOLIS, ASSINIBOINE, ATHABASKAN, FRASER, HURON, IROQUOIS, MARGAREE, NIPIGON, OTTAWA, SAGUENAY, SKEENA

106.27 A-5 SHIP: ALGONQUIN, ANNAPOLIS, ASSINIBOINE, ATHABASKAN, FRASER, HURON, IROQUOIS, MARGAREE, NIPIGON, OTTAWA, SAGUENAY, SKEENA, Various Chartered Vessels, Ship not identified

106.28 A-1 SHIP: CHAUDIERE, COLUMBIA, GATINEAU, MACKENZIE, OTTAWA, QUAPPELLE, SAMARIE, TERRA NOVA, YUKON

106.28 A-2 SHIP: CHAUDIERE, COLUMBIA, GATINEAU, KOOTENAY, MACKENZIE, PROVIDER, QUAPPELLE, RESTIGOUCHE, SAMARIE, SASKATCHEWAN, TERRANOVA, YUKON

106.28 A-3 SHIP: ATHABASKAN, GATINEAU, KOOTENAY, MACKENZIE, PROVIDER, QUAPPELLE, RESTIGOUCHE, SASKATCHEWAN, TERRANOVA, YUKON, Ship not identified

106.28 A-4 SHIP: GATINEAU, KOOTENAY, MACKENZIE, PROVIDER, QUAPPELLE, RESTIGOUCHE, SASKATCHEWAN, TERRANOVA, YUKON

206.8 E-4

SHIP	CRUISE	PERIOD	NO. OF STAS.
ENDEAVOUR	1	30.I.-4.II.1979	30
PANDORA II	2	3.IV.1979	14
VECTOR	3	18.-19.IV.1979	16
PARIZEAU	4	20.V.1979	16
PANDORA II	5	21.VI.1979	17
VECTOR	6	22.VIII.1979	16
PARIZEAU	7	4.-5.X.1979	18
PARIZEAU	8	28.-29.XI.1979	17
PARIZEAU	9	8.-10.II.1980	17
PANDORA II	10	26.-27.III.1980	21
PARIZEAU	11	23.IV.1980	16
PARIZEAU	12	13.-14.VI.1980	16
ENDEAVOUR	12A	25.VII.1980	12
VECTOR	13	12.VIII.1980	15
PARIZEAU	14	19.-20.IX.1980	16
VECTOR	15	22.-23.X.1980	10
VECTOR	16	24.-25.XI.1980	17
VECTOR	17	7.I.1981	16
PARIZEAU	18	5.-12.II.1981	50
VECTOR	19	11.III.1981	16
PARIZEAU	21	7.-8.VI.1981	16
PARIZEAU	22	7.IX.1981	13
PARIZEAU	20	22.IV.1981	16
PARIZEAU	21	7.-8.VI.1981	16
PARIZEAU	22	7.IX.1981	13

206.8 E-5

SHIP	CRUISE	PERIOD	NO. OF STAS
PARIZEAU	02	6.-7.XII.1981	10
PARIZEAU	03	27.-28.I.1982	9
VECTOR	05	21.-22.VI.1982	Surface Obs. Only
VECTOR	OC-82-IS-001	26.-28.III.1982	11
VECTOR	OC-82-IS-003	27.-28.IX.1982	11

SEA SURFACE: Observations consist of single readings at depth.

206.8 E-6 Coastal Ocean Dynamics Experiment (CODE)

CRUISE	PERIOD	NO. OF STAS.	
		CTD	HYDRO
79-12	6.-12.V.1979	36	8
79-14	3.-11.VIII.1979	57	-
79-15	23.-26.IX.1979	27	7
80-10	15.-27.I.1980	68	7
80-11	30.IV.-16.V.1980	91	-
80-13	22.-20.VII.1980	69	-
80-14	3.-10.IX.1980	88	-

SEA SURFACE: Readings at surface and at depth.

206.8 E-7 Coastal Ocean Dynamics Experiment (CODE)

SHIP	CRUISE	PERIOD	NO. OF STAS.
ENDEAVOUR	1	30.I.-4.II.1979	52
PANDORA II	2	8.III.1979	9
VECTOR	3	19.IV.1979	11
PARIZEAU	4	18.-24.V.1979	35
PANDORA II	5	21.-22.VI.1979	9
PARIZEAU	7	12.-13.X.1979	11
PARIZEAU	8	27.-28.XI.1979	11
PARIZEAU	9	7.-8.II.1980	19
PANDORA II	10	25.-26.III.1980	19
PARIZEAU	11	22.-23.IV.1980	19
PARIZEAU	12	11.-12.VI.1980	35
VECTOR	13	13.-14.VIII.1980	19
PARIZEAU	14	22.-24.IX.1980	51
VECTOR	15	22.X.1980	10
VECTOR	16	27.XI.1980	1
VECTOR	17	6.I.1981	9
PARIZEAU	18	4.-5.II.1981	19
VECTOR	19	10.III.1981	10
PARIZEAU	20	21.-22.IV.1981	19
PARIZEAU	22	5.-6.IX.1981	22

109.2 E-13 SEA SURFACE: Single readings at depth.

109.5 B-1 SEA SURFACE: Single readings at depth.

114.1 M-31

DOD NO.	CRUISE	PERIOD	NO. OF XBT STAS.
83121	12	22.V.-28.VI.1983	35
83122	27	21.VI.-3.VIII.1983	32
83145	13	7.VII.-13.VIII.1983	24
83140	28	14.VIII.-16.IX.1983	22
83146	14	31.VIII.-12.X.1983	36
84032	01	14.X.-12.XI.1983	22
84031	15	23.X.-26.XI.1983	24
84056	03	25.XI.1983-1.I.1984	9

114.1 M-32

DOD NO.	CRUISE	PERIOD	NO. OF XBT STAS.
84057	04	12.II.-17.III.1984	17
84053	18	18.III.-21.IV.1984	26
84130	06	10.VI.-18.VII.1984	29
84131	07	29.VII.-6.IX.1984	36
84146	08	14.IX.-25.X.1984	39

114.1 M-33

DOD NO.	CRUISE	PERIOD	NO. OF STAS.	NO. OF XBT STAS.
83121	12	22.V.28.VI.1983	--	35
83141	01	7.-18.IX.1983	--	24
84055	02	10.-13.XII.1983	--	7
84035	16	11.-14.XII.1983	--	8
85062	BALMON	20.II.-9.III.1984	15	--
84128	04	12.-16.IV.1984	--	10
85063	BALMON	8.-16.V.1984	15	--
85064	BALMON	7.-20.XI.1984	15	--

114.4 A-7

DOD NO.	PERIOD	NO. OF STAS.
83075	20.VI.1983	6
83149	25.-26.X.1983	11
84007	21.-22.XI.1983	11
84015	13.-14.XII.1983	11

114.4 C-16 SEA SURFACE: Single readings taken at various depths.

114.4 C-17 SEA SURFACE: Single readings taken at various depths.

114.6 C-5

DOD NO.	CRUISE	PERIOD	NO. OF STAS.	NO. OF SURF. STAS.
84027	23	5.-13.IV.1978	4	20
84028	37	2.-9.VI.1978	4	21
84029	53	21.-28.IX.1978	4	21
84030	81	6.-15.XII.1978	2	23

114.6 C-6 SEA SURFACE: Single readings taken at various depths.

114.11 A-6 SEA SURFACE: All stations consist of single readings taken at 5 meters.

114.11 B-6

DOD NO.	CRUISE	PERIOD	NO. OF STAS.
83105	15	3.-21.VI.1975	17
76115	33	23.VII.-9.VIII.1976	7
77054	47	14.-24.V.1977	11
78132	65	20.-27.VII.1978	7
79047	77	30.III.-10.IV.1979	16

114.11 B-7

DOD NO.	CRUISE	PERIOD	NO. OF STAS.
80046	97	30.IV.-6.V.1980	7
80047	99	28.V.-6.VI.1980	9
80049	101	5.-13.VII.1980	10

114.11 B-9

DOD NO.	CRUISE	PERIOD	NO. OF STAS.	
			SERIAL	SURFACE
83010	136	24.-28.IV.1982	4	--
83011	139	9.-16.VI.1982	2	--
83062	141	11.-18.VIII.1982	--	76

SURFACE: All stations consist of single readings taken at the bottom.

214.1

FIXED STATIONS	REGION		NO. OF STAS.	NO. OF CURRENT OBS.
	North Sea			
BORKUMRIFF (LV)	53°48.0'N	6°22.0'E	--	3,640
DEUTSCHE BUCHT (LV)	54°11.0'N	7°27.0'E	--	2,563
ELBE I (LV)	54°00.0'N	8°07.0'E	52	3,843
	Baltic Sea			
FEHMARNBELT (LV)	54°36.0'N	11°09.0'E	92	531

214.2 A-1 REGION: Fixed Stations: 54°31'N 10°30'E
54°36'N 11°09'E
54°46'N 10°47'E

120.1 A-34 CURRENTS: Subsurface currents measured by Ekman type current meters.

124.2 B-55 NO. OF STAS: A total of 118 stations were obtained by electronic, in-situ, conductivity/temperature/depth (CTD) sensors.

CRUISE	PERIOD	STAS.	PHYT.	NO. OF FISHERY OBS.			
				Longline	Gillnet	Trawls	Larvae
1	10.-13.II.1984	--	--	--	--	13	--
2	4.-6.IV.1984	1	--	--	--	6	--
3	12.VI.-19.VIII. 1984	106	112	9	19	--	60
4	2.-5.IX.1984	12	10	--	--	3	--

124.2 C-8

CRUISE	PERIOD	STAS.	XBT	NO. OF FISHERY OBS.		
				Longline	Gillnet	Trawls
24	1.XI.-3.XII.1983	60	--	34	--	12
25	1.-5.IV.1984	26	--	--	--	10
26	4.VI.-5.VIII.1984	58	15	--	26	--

124.5 B-21 SHIP:
CHIBA MARU No. 2
FUSAMI MARU
FUSAMI MARU No. 2
KAIKO MARU
MIYAKO
SHIOKAZE
SOYO MARU
SURUGA MARU
TONAN MARU
USHIO
WAKAYAMA

NO. OF STAS: A total of 530 stations were obtained by electronic, in-situ, salinity/temperature/depth (STD) sensors.

124.13 B-21 SHIP: A total of 681 XTb's and 1,366 GEK's were taken by the following ships:

DAIO
ETIZEN
ISAZU
KAIYO
KOSIKI
KUNGAMI
KUROBE
MATUSIMA
MEIYO
OKINAWA
OZIKA
SADO
SATUMA
SINANO
SIRETOKO
SORATI
TESIO

A total of 836 GEK's were taken by the following ships:

ABUKUMA	KUMA	SENDAI
AMAMI	MATUURA	SIKINE
ASIZURI	MINABE	SIMOKITA
AWAZI	MIURA	SINANO
ETIZEN	MOTOBU	SURUGA
HATERUMA	MUROTO	SUZUKA
HUZI	NATORI	TYOKAI
IWAKI MARU	NOTO	WAKASA
KAMISIMA	NOZIMA	YONAKUNI
KATORI	REBUN	

124.13 KKK-16 BIOLOGICAL: Hydrocarbons - 40

124.19 B-21 SHIP:

GENKAI MARU	TSUKUSHI
HINOKUNI	TSURU MARU
KUROSHIO MARU	YOKO MARU
SATSUNAN	

124.20 A-21 SHIP:

HOKKO MARU	OYASHIO MARU
HOKUSHIN MARU	SHUNYO MARU
HOKUYO MARU	TANKAI MARU
KINSEI MARU	YAMASAN MARU No. 11
MATSUDA MARU No. 2	

NO. OF STAS: A total of 49 stations were obtained by electronic, in-situ, salinity/temperature/depth (STD) sensors.

124.21 A-23 SHIP:

AZUMA MARU	SHIN DAITO MARU
HAKUCHO MARU	SHUNYO MARU
HOKKO MARU	SOYO MARU
IWAKI MARU	TOKIWA
IWATE MARU	TOO MARU
KAIUN MARU	WAKATAKA MARU
NATSUDA MARU	YOSHI MARU No. 81

NO. OF STAS: A total of 58 stations were obtained by electronic, in-situ, salinity/temperature/depth (STD) sensors.

124.22 A-21 SHIP:

FUKUI MARU	SEIHO MARU
HAKUSAN MARU	SENSHU MARU
HEIAN MARU	SHINTAJIMA MARU
HIZUHO MARU	SHIMANE MARU
KOSHIJI MARU	TATEYAMA MARU
MIZUHO MARU	TOO MARU
MOGAMI MARU	TOTTORI MARU No. 1

NO. OF STAS: A total of 289 stations were obtained by electronic, in-situ, salinity/temperature/depth (STD) sensors.

124.23 A-24

SHIP:

AKI	TACHIBANA
BUZEN	TAKUYO
HAYASUI MARU	TONAN MARU
HAYATE	TOSA
HYOGO MARU	TUKUSHIMA
ISOKAZE	WAKAYAMA
KUROSHIO	YAKURI
MIDORI	YOSHU MARU
SHIOKAZE	

NO. OF STAS: A total of 41 stations were obtained by electronic, in-situ, salinity/temperature/depth (STD) sensors.

124.24 B-38

NO. OF STAS: A total 19 stations were obtained by electronic, in-situ, conductivity/temperature/depth (CTD) sensors.

124.27 A-16

SHIP:

AICHI MARU	KAGAWA MARU
AOMOKI MARU	KANO MARU
AOMORI MARU	KASHIMA MARU
ASHU MARU No. 2	OITA MARU
CHISHIO MARU	OYAMA MARU
CHOHO MARU	RIASU MARU No. 1
CHOKAI MARU	RIASU MARU No. 2
CHOSUI MARU	SATSUMASEIUN MARU
DITA MARU	SHINKAI MARU
EHIME MARU	SHINYO MARU
ETSUZAN	SHONAN MARU
FUKUSHIMA MARU	TOSAKAIEN MARU
FUNAKAWA MARU	UNRYU MARU
GENYO MARU	WAKACHIBA MARU
HIYAGI MARU	WAKATORI MARU

224.1 A-8

CURRENTS: Each station represents eight readings taken during one day.

SEA SURFACE: Temperature observations consist of single readings taken at 2, 20, and 50 meters.

135.1 G-20

NO. OF STAS: A total of 186 stations were obtained by electronic, in-situ, conductivity/temperature/depth (CTD) sensors.

235.2 L-3

SHIP: TV 101, TV 102, TV 116, TV 244, TV 252, TV 253, TV 256, TV 276

137.1 B-22

BT: XBT´s were taken during the period 23.VI.-9.VIII.1978 only.

137.1 H-14	BT: XBT's were taken during the period 18.VIII.-18.IX.1977 only.
137.2 E-11	BT: XBT's were taken during the period 10.VII.-16.VIII.1977 only.
137.4 A-29	BT: XBT's were taken during the period 11.XI.1977-7.I.1978 only.
137.4 B-11	BT: XBT's were taken during the period 19.X.-7.XI.1976 only.
137.4 B-16	BT: XBT's were taken during the period 16.VI.-9.VII.1978 only.
137.5 J-1	BT: XBT's were taken during the period 10.VIII.-16.X.1977 only.
137.15 G-1	BT: XBT's were taken during the period 22.II.-9.VI.1978 only.
139.8 D-85	NO. OF STAS: A total of 293 stations were obtained by electronic, in-situ, salinity/temperature/depth (STD) sensors.
	SEA SURFACE: Single readings taken at 10 meters.
139.8 V-4	SEA SURFACE: Single readings taken at 10 meters.
139.8 V-5	SEA SURFACE: Single readings taken at 10 meters
139.16 P-1	BT: XBT's were taken during the period 17.II.-5.III.1971 only.
139.23 C-2	BT: XBT's were taken during the period 15.-17.IX.1971.
139.23 K-1	BT: XBT's were taken during the period 13.-16.IX.1970 only.
139.23 K-3	BT: XBT's were taken during the period 9.IX.-3.X.1971 only.
139.23 W-4	SURFACE: Single readings taken at 10 meters.
139.23 Y-6	SURFACE: Single readings taken at 4 meters.
139.23 Y-8	NO. OF STAS: A total of 230 stations were obtained by electronic, in-situ, conductivity/temperature/depth (CTD) sensors.
	SURFACE: Single readings taken at 10 meters.
139.23 Y-9	SURFACE: Single readings taken at 10 meters.
139.23 Y-10	SURFACE: Single readings taken at 10 meters.

TRACK CHARTS

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